CDX-52/52RF

SERVICE MANUAL

US Model
Canadian Model
E Model
CDX-52/52RF
AEP Model
UK Model
CDX-52RF

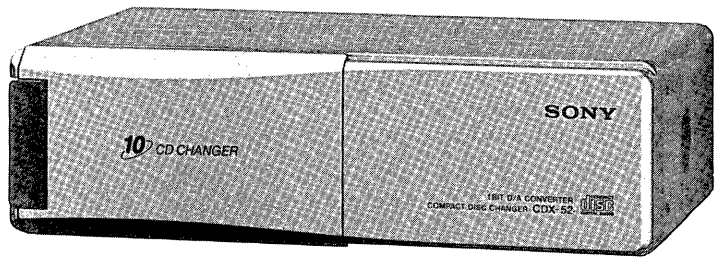

Photo: CDX-52

Model Name Using Similar Mechanism	CDX-51/51RF
CD Drive Mechanism Type	MG-110A-132
Optical Pick-Up Name	KSS-410A

SPECIFICATIONS

CD changer

System	Compact disc digital audio system
Laser Diode Properties	Material: GaAlAs Wavelength: 780nm Emission Duration: Continuous Laser out-put Power: Less than 44.6 µW* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	10 – 20,000 Hz
Wow and flutter	Below than the measurable limit
Signal-to-noise ratio	More than 90 dB
Output terminals	BUS control output terminal (8 pin) Analog audio output terminal (RCA pin)
Current drain	800 mA (at playback) 800 mA (at disc loading / ejecting)
Operating temperature	–10°C to +55°C (14°F to 131°F)
Dimensions	Approx. 305 × 90 × 180 mm ($12\ ^{1}/_{8} \times 3\ ^{5}/_{8} \times 7\ ^{1}/_{8}$ in.) (w/h/d)
Mass	Approx. 2.2 kg (4 lb. 13 oz.)

Hideaway unit / Wired remote (RM-X57) / Wireless remote (RM-X58) (CDX-52RF)

Frequency	88.3MHz/88.5MHz/88.7MHz/88.9MHz/89.1MHz/89.3MHz/89.5MHz/89.7MHz/89.9MHz/ (switchable)
Dimensions	Hideaway unit: Approx. 125.2 × 31.6 × 128.2 mm ($5 \times 1\ ^{1}/_{4} \times 5\ ^{1}/_{8}$ in.) (w/h/d) Wired remote: Approx. 148 × 30 × 15 mm ($5\ ^{7}/_{8} \times 1\ ^{3}/_{16} \times\ ^{19}/_{32}$ in.) (w/h/d) Wireless remote: Approx. 38.4 × 6.4 × 84.4 mm ($1\ ^{9}/_{16} \times\ ^{9}/_{32} \times 3\ ^{3}/_{8}$ in.) (w/h/d)
Mass	Hideaway unit: Approx. 450 g (15.9 oz.) Wired remote: Approx. 120 g (4.2 oz.) Wireless remote: Approx. 20 g (0.7 oz.)

Supplied accessories

Disc magazine (1)
BUS cable (1)
RCA pin cord (1)
Mounting hardware (1 set)
Lithium battery (CR2025) (1)
(CDX-52RF)

Design and specifications subject to change without notice.

CDX-52
COMPACT DISC CHANGER

CDX-52RF
COMPACT DISC CHANGER SYSTEM

SONY®

使用時は添付資料も参照のこと
Refer to the aooitional documents

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SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*
  * This output is the value measured at a distance of 200 mm from the objective lens surfase on the Optical Pick-up Block.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ℃ during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted from CDX-52RF's instruction manual.

Installation/Installation

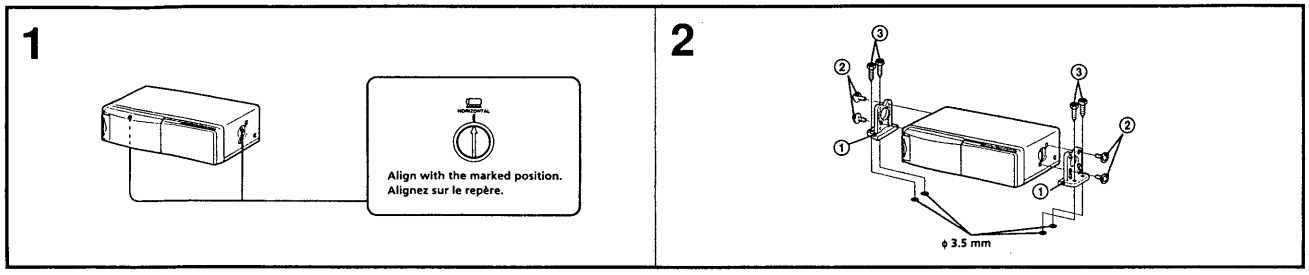
How to install the CD changer

When you install the CD changer, be careful not to damage wiring or equipment on the other side of the mounting surface.

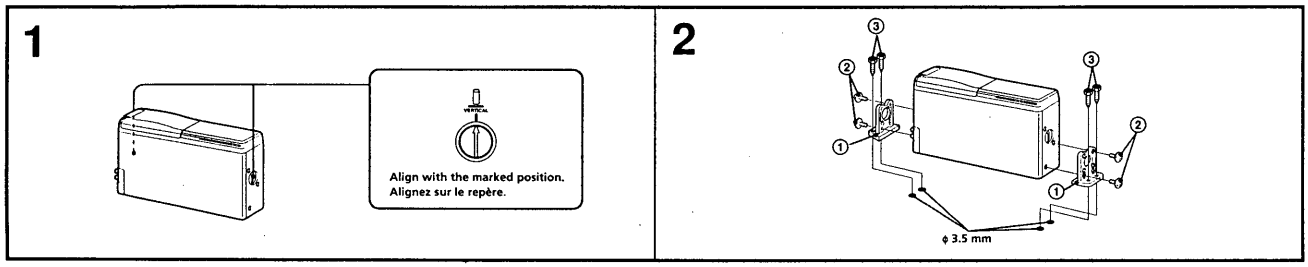
Installation du changeur de CD

Quand vous installez le changeur de CD, veillez à ne pas endommager les câbles ou les instruments qui se trouvent de l'autre côté.

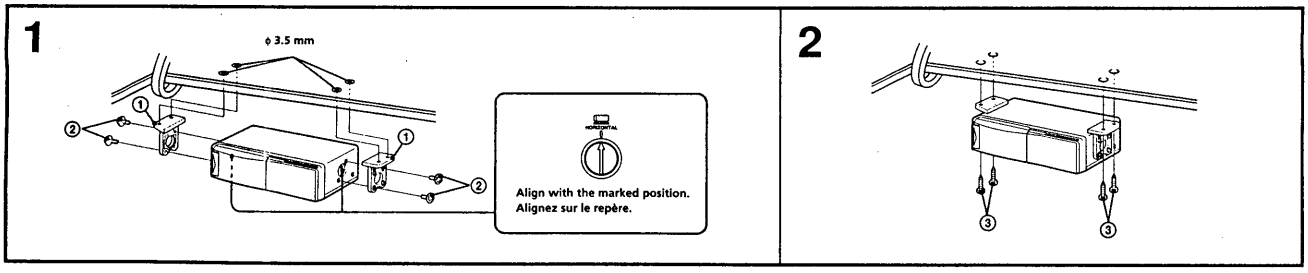
Horizontal installation/Installation horizontale



Vertical installation/Installation verticale



Suspended installation/Installation suspendue



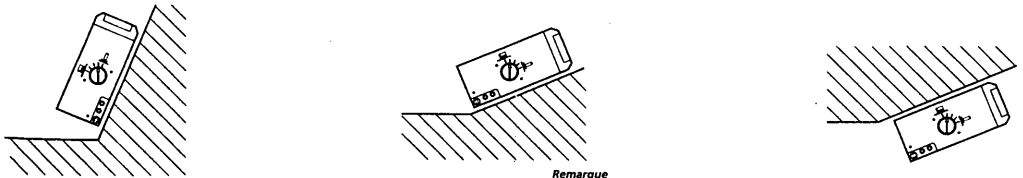
When the unit is to be installed under the rear tray or in the trunk, observe the following.
- Choose the mounting location carefully so that the unit can be installed horizontally.
- Make sure that the unit does not hinder the movement of the trunk door.

Si vous comptez installer le changeur de CD sous la plage arrière par exemple ou dans le coffre, prenez les précautions suivantes.
- Choisissez soigneusement l'emplacement pour que le changeur soit à l'horizontale.
- Vérifiez que le changeur ne gêne pas le ressort du capot, entre autres.

Inclined installation/Installation inclinée

After installing the unit, align the dial with one of the marks so that the arrow comes as close to a vertical position as possible.

Après avoir installé l'appareil, alignez le disque sur l'un des repères afin que la flèche soit aussi proche que possible de la position verticale.



Note
Be sure to align the left and right dials with the same mark.

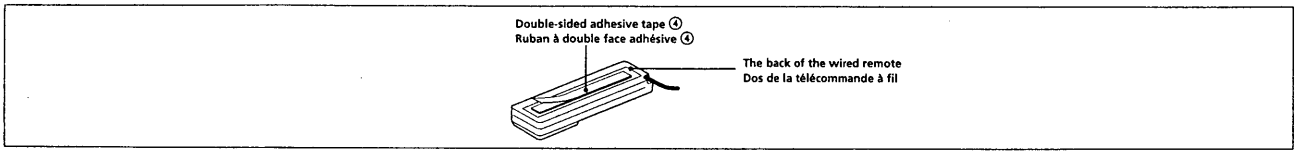
Remarque
Veillez à aligner les disques gauche et droite sur le même repère.

Installing the wired remote

Use the supplied double-sided adhesive tape ④, and mount the wired remote in a suitable location where it will not interfere with your driving.

Installation de la télécommande à fil

Utilisez la bande à double face adhésive fournie ④ pour installer la télécommande à fil dans un endroit qui ne risque pas de gêner la conduite.

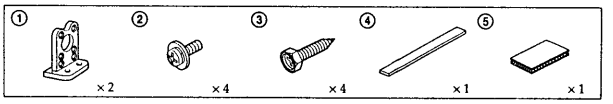


Parts for installation and connections

The numbers in the list are keyed to those in the instructions.

Matériel de montage fourni

Les numéros de la liste correspondent à celles des instructions.



CD changer

- Choose the mounting location carefully, observing the following:
  - — Do not install the unit where it will be subjected to hot air from the heater.
  - — Do not install the unit where it will be subjected to direct sunlight.
  - — The fuel tank should not be damaged by the tapping screws.
  - — There should be no wire harnesses or pipelines under the place where you are going to install the unit.
  - — The spare tire, tools, or other equipment in or under the trunk should not be interfered with or damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.

Changeur de CD

- Choisir l'emplacement de montage en tenant compte des observations suivantes:
  - — L'appareil ne peut pas être exposé au courant d'air chaud du chauffage,
  - — ni être en plein soleil.
  - — Vérifiez que le réservoir d'essence ne risque pas d'être endommagé par les vis taraudeuses.
  - — Il ne doit pas y avoir de faisceaux de fils ou de tuyaux à l'emplacement du montage.
  - — Vérifiez que l'appareil ou les vis ne risquent pas d'endommager ou de gêner la roue de secours, les outils ou autre objet dans le coffre.
- Pour garantir la sécurité de l'installation, utilisez uniquement le matériel de montage fourni.

Wired remote

- Avoid mounting it where it may:
  - — hinder normal driving activities.
  - — jeopardize the passengers.
  - — be subjected to hot air from the heater.
  - — be subjected to direct sunlight.
- After installing the system, be sure to check that the whole system can be operated by the wired remote.

Télécommande à fil

- Evitez de l'installer dans des endroits où elle pourrait:
  - — gêner la conduite normale du véhicule,
  - — mettre les passagers en danger,
  - — être exposée au courant d'air chaud du chauffage,
  - — être en plein soleil.
- Quand vous avez installé le système, vérifiez que la télécommande à fil peut commander tout le système.

Connections/Connexions

Caution

- The use of optical instruments with this product will increase eye hazard.
- This system is designed for negative ground 12 V DC-operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is powered when the ignition switch is in the accessory position.
- **Run all ground wires to a common ground point.**
- **Press the reset button on the hideaway unit after completing the connections.**

Précautions

- Ce système est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les raccordements, débranchez la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Branchez les fils d'entrée d'alimentation **jaune** et **rouge** seulement après avoir terminé tous les autres branchements.
- Veillez à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoire.
- **Rassemblez tous les fils de terre en un point de masse commun.**
- **Quand vous avez terminé les connexions, appuyez sur la touche de réinitialisation du modulateur.**

Fuse replacement

If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction.

Warning

Use a fuse with the specified amperage rating. Use of a higher amperage fuse may cause serious damage.

Remplacement du fusible

Si le fusible saute, vérifiez les connexions d'alimentation et remplacez-le. Si le fusible saute à nouveau quand vous venez de le remplacer, il s'agit peut être d'un mauvais fonctionnement interne.

Avertissement

Utilisez un fusible de l'ampérage spécifié. L'utilisation d'un fusible d'ampérage supérieur peut causer de sérieux dommages.

Installing the system in a car without an accessory switch position

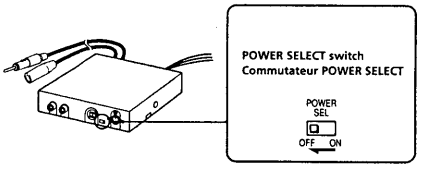
POWER SELECT switch setting

When the unit is used in a car without an accessory position on the ignition switch, set the POWER SELECT switch on the side of the hideaway unit to OFF.
This causes the display to go out when you turn the ignition OFF. After changing the POWER SELECT switch position, be sure to press RESET on the hideaway unit with a ball-point pen etc.

Installation du système dans une voiture sans position accessoire

Réglage du commutateur POWER SELECT

Si vous utilisez cet appareil sur un véhicule dont le contacteur d'allumage est dépourvu de toute position accessoire, amenez le commutateur de POWER SELECT monté sur le flanc du modulateur sur la position OFF. Ainsi, l'affichage s'éteindra lorsque vous amènerez la clé de contact sur la position OFF. Après avoir modifié la position du commutateur de POWER SELECT n'oubliez pas d'appuyer sur RESET du modulateur avec un stylo-bille ou autre objet pointu.

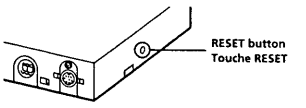


Reset button

After the installation and connections are complet, after the batteries have been changed, or when the POWER SELECT switch has been changed, be sure to press RESET with a ball-point pen, etc.

Touche de réinitialisation

Lorsque l'installation et les connexions sont terminées, que les piles ont été remplacées ou lorsque le commutateur POWER SELECT a été réinitialisé, n'oubliez pas d'appuyer sur RESET à l'aide d'une pointe bic, etc.

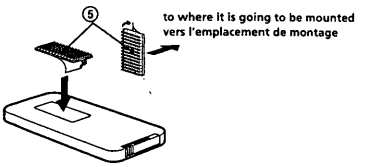


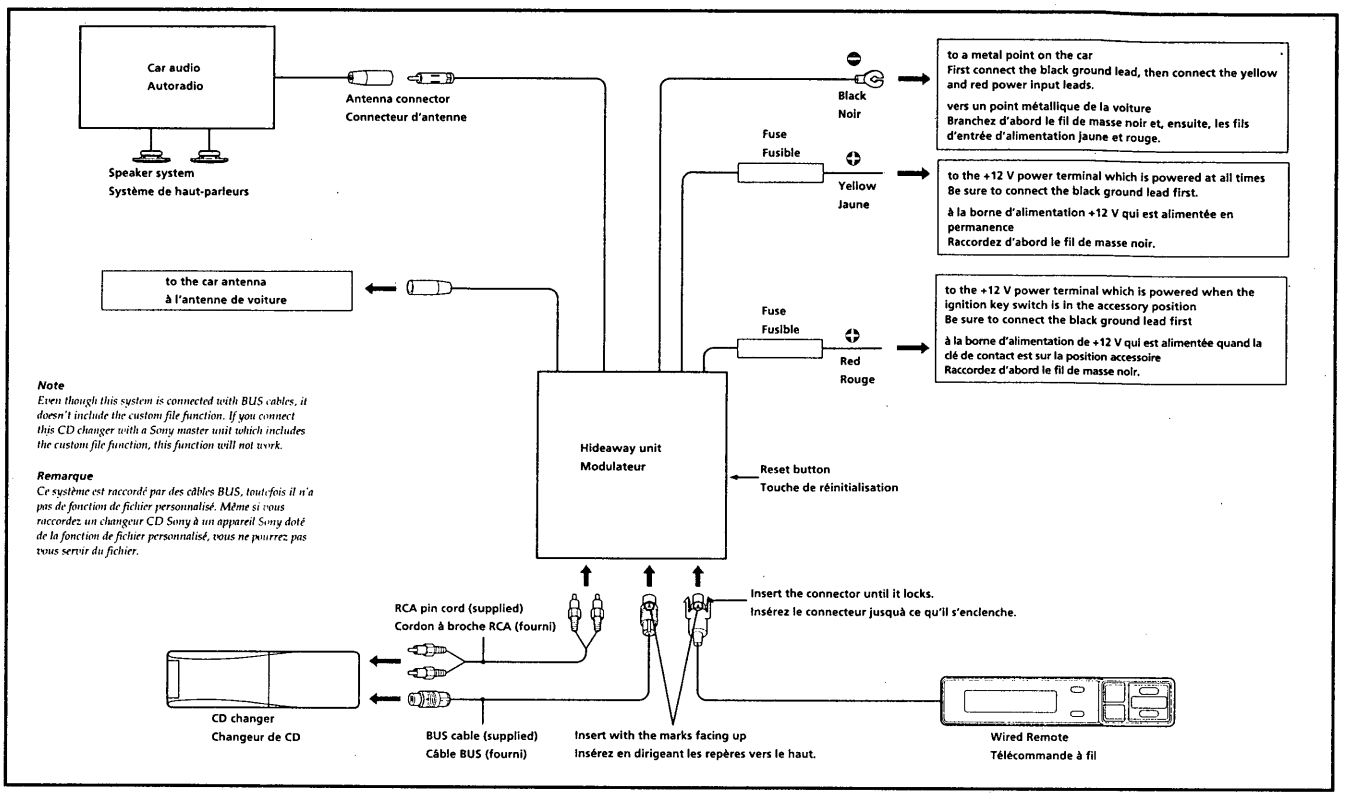
Install the wireless remote

Use the supplied velcro tapes ⑤, and mount the wireless remote in a suitable location where it will not interfere with your driving.

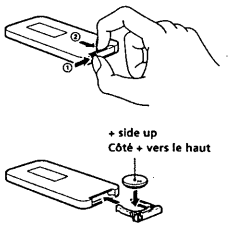
Installation de la télécommande sans fil

Utilisez les bandes velcro fournies ⑤ pour installer la télécommande sans fil dans un endroit qui ne risque pas de gêner la conduite.




Car audio
Autoradio
Antenna connector
Connecteur d'antenne
Speaker system
Système de haut-parleurs
Black
Noir
to a metal point on the car
First connect the black ground lead, then connect the yellow and red power input leads.
vers un point métallique de la voiture
Branchez d'abord le fil de masse noir et, ensuite, les fils d'entrée d'alimentation jaune et rouge.
Fuse
Fusible
Yellow
Jaune
to the +12 V power terminal which is powered at all times
Be sure to connect the black ground lead first.
à la borne d'alimentation +12 V qui est alimentée en permanence
Raccordez d'abord le fil de masse noir.
to the car antenna
à l'antenne de voiture
Fuse
Fusible
Red
Rouge
to the +12 V power terminal which is powered when the ignition key switch is in the accessory position
Be sure to connect the black ground lead first
à la borne d'alimentation de +12 V qui est alimentée quand la clé de contact est sur la position accessoire
Raccordez d'abord le fil de masse noir.
Note
Even though this system is connected with BUS cables, it doesn't include the custom file function. If you connect this CD changer with a Sony master unit which includes the custom file function, this function will not work.
Remarque
Ce système est raccordé par des câbles BUS, toutefois il n'a pas de fonction de fichier personnalisé. Même si vous raccordez un changeur CD Sony à un appareil Sony doté de la fonction de fichier personnalisé, vous ne pourrez pas vous servir du fichier.
Hideaway unit
Modulateur
Reset button
Touche de réinitialisation
Insert the connector until it locks.
Insérez le connecteur jusqua ce qu'il s'enclenche.
RCA pin cord (supplied)
Cordon à broche RCA (fourni)
CD changer
Changeur de CD
BUS cable (supplied)
Câble BUS (fourni)
Insert with the marks facing up
Insérez en dirigeant les repères vers le haut.
Wired Remote
Télécommande à fil

Installing the battery



Replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of another battery may present a risk of fire or explosion.

Lithium battery life

When the battery becomes weak, you will not be able to operate the unit with the wireless remote.
Battery life is approx. six months although it depending on the conditions of use.

WARNING
Battery may explode if mistreated.
Do not recharge, disassemble or dispose of in fire.

NOTES ON THE LITHIUM BATTERY

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.

Installation des pile

Remplacez la pile par une pile au lithium CR2075 Sony ou DL-2025 Duracell. L'utilisation d'une autre pile comporte un risque d'incendie ou d'explosion.

Autonomie de la pile au lithium

Lorsque les piles s'épuisent, il ne vous sera plus possible de commander l'appareil à l'aide de la télécommande sans fil. La pile offre une autonomie d'environ six mois, qui peut cependant varier en fonction des conditions d'utilisation.

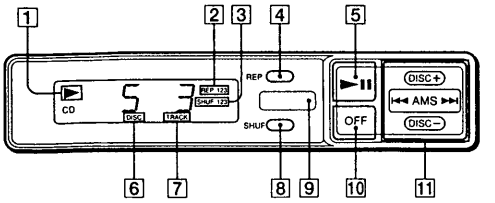
ATTENTION
Utilisée de façon incorrecte, la pile peut exploser. Ne pas la recharger, la démonter ni la jeter dans un feu.

REMARQUES SUR LES PILES AU LITHIUM

- Gardez les piles au lithium hors de la portée des enfants. En cas d'ingestion, consultez immédiatement un médecin.
- Essuyez la pile à l'aide d'un chiffon sec de façon à assurer un bon contact.
- Respectez la polarité de la pile lorsque vous l'installez.
- Ne saisissez pas la pile à l'aide d'une pince métallique, sinon vous risquez de provoquer un court-circuit.

Location and function of controls/Nomenclature

Wired remote (RM-X57)/Télécommande à fil (RM-X57)



1 ►(play/pause) indication
Lights during CD playback and flashes when the pause button is pressed.

2 REP (repeat play) indication

3 SHUF (shuffle play) indication

4 REP (repeat play/control mode set) button

5 ►II (play/pause) button
If pressed during playback, the CD will pause. If pressed again, playback will continue.

6 DISC (disc number) indication
The indicated disc number matches the disc number in the disc magazine.

7 TRACK (track number) indication

8 SHUF (shuffle play) button

9 Infrared receptor for the wireless remote

10 OFF button

11 AMS*/DISC (disc select/manual search) button
Depending on which side of the button you press, you can select from the following functions.

*Automatic Music Sensor

AMS function
To locate the beginning of a track, press
►►I to locate the beginning of the next track.
I◄◄ to locate the beginning of the track currently played.
If you press the switch repeatedly, the beginnings of all following or previous tracks will be located until the end of the disc is reached.

Disc select function
To select a desired disc, press **momentarily**
+ to select the next disc.
– to select the previous disc.

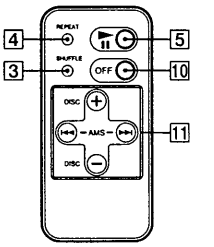
Manual search function
To quickly locate a desired point of a track, press **and hold down**
+ to fast-forward.
– to fast-reverse.
The elapsed playing time of the track will be shown in the display window during manual search.

When the unit is used in a car without an accessory position on the ignition key switch

Be sure to press OFF on the wireless remote to turn the system off to avoid battery wear while the engine is not running.

If the POWER SELECT switch on the hideaway unit is set to the OFF position and the display on the wired remote is turned off, you will not be able to start CD playback with the wireless remote. In this case, press ►II on the wired remote.

Wireless remote (RM-X58)/Télécommande sans fil (RM-X58)



1 Témoin de lecture/pause (►)
Il s'allume pendant la lecture de CD et clignote pendant le mode de pause.

2 Indication de répétition de la lecture (REP)

3 Indication de lecture aléatoire (SHUF)

4 Touche de répétition de la lecture/mode de réglage (REP)

5 Touche de lecture/pause (►II)
Si vous appuyez pendant la lecture de CD, l'appareil se met en mode de pause. Appuyez de nouveau pour reprendre la lecture.

6 Numéro de disque (DISC)
Le numéro de disque indiqué correspond au numéro de disque dans le chargeur.

7 Numéro de plage (TRACK)

8 Touche de lecture aléatoire (SHUF)

9 Récepteur de télécommande sans fil IR

10 Touche d'arrêt de la lecture de CD (OFF)

11 Touche de disque/recherche manuelle (AMS*/DISC)
Selon le côté de la touche où vous appuyez, vous pouvez choisir une des fonctions suivantes.

* Automatic Music Sensor: Détecteur automatique de plages musicales

Fonction AMS
Quand vous recherchez le début d'une plage, appuyez sur
►►I pour localiser le début de la plage suivante.
I◄◄ pour localiser le début de la plage en cours.
Si vous appuyez à plusieurs reprises sur le sélecteur, vous pourrez localiser le début des plages précédentes ou suivantes jusqu'à la fin du disque.

Fonction de sélection de disque
Quand vous voulez sélectionner un disque, appuyez **momentanément** sur
+ pour choisir le disque précédent.
– pour choisir le disque suivant.

Fonction de recherche manuelle
Quand vous voulez rechercher rapidement un passage d'une plage, appuyez et **tenez enfonce**
+ pour avancer rapidement.
– pour reculer rapidement.
La durée écoulée de la plage apparaît sur l'afficheur pendant la recherche manuelle.

Quand l'appareil est utilisé dans une voiture sans position accessoire de la clé de contact

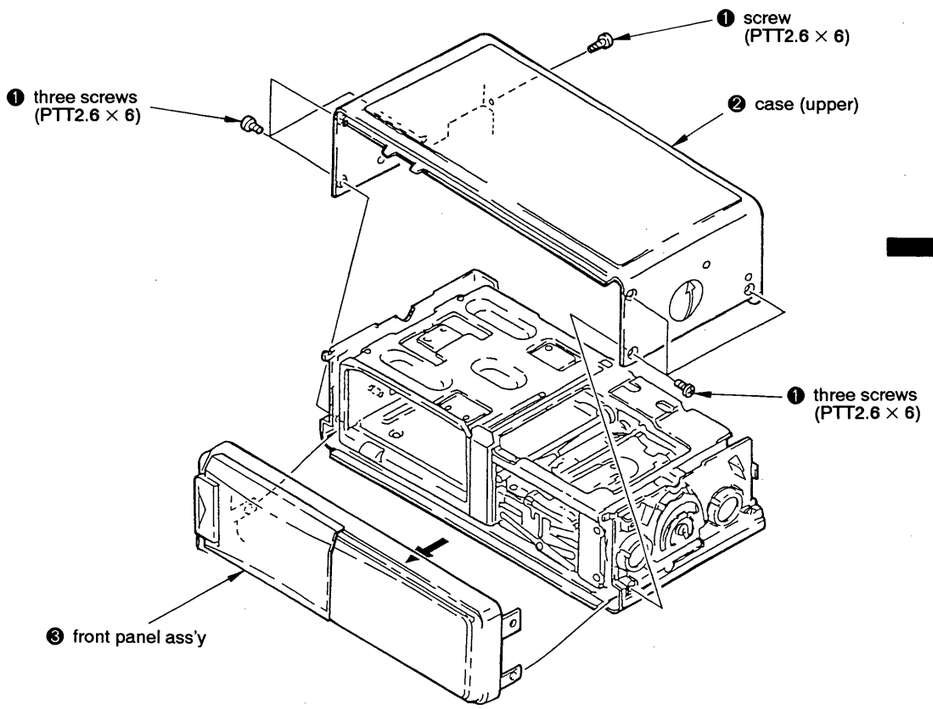
N'oubliez pas d'appuyer sur OFF de la télécommande sans fil pour éteindre la chaîne et éviter l'usure de la batterie quand vous quittez votre voiture et que le moteur ne tourne pas.

Lorsque le sélecteur POWER SELECT sur l'appareil dissimulé se trouve sur la position OFF et que la télécommande à fil de l'unité d'affichage est hors tension, vous ne pourrez pas démarrer la lecture de CD avec la télécommande sans fil. Dans ce cas, vous devez appuyer sur ►II sur la télécommande à fil.

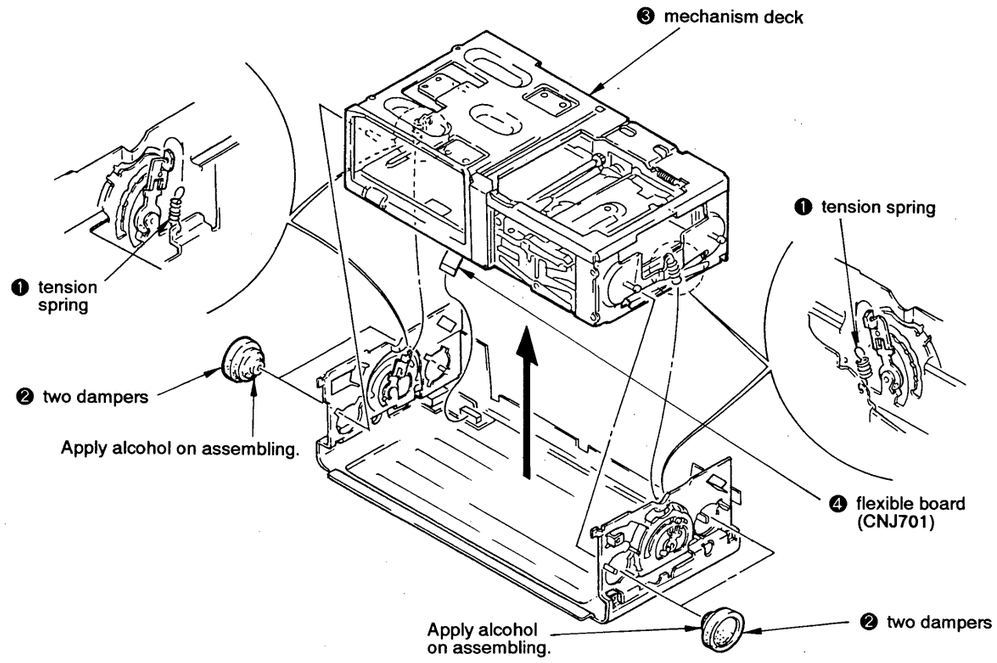
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

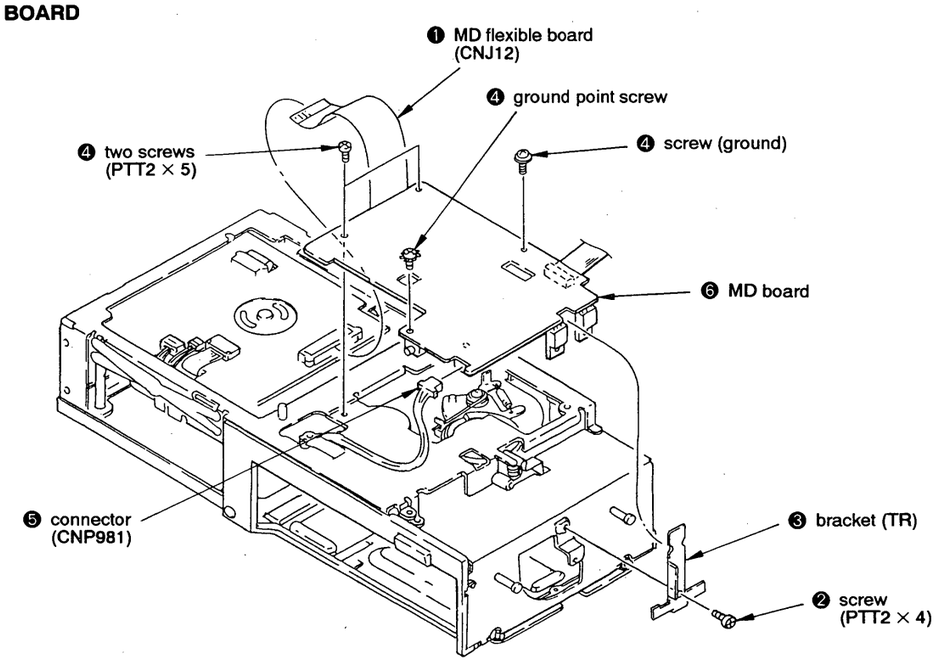
CASE (UPPER) AND FRONT PANEL ASS'Y



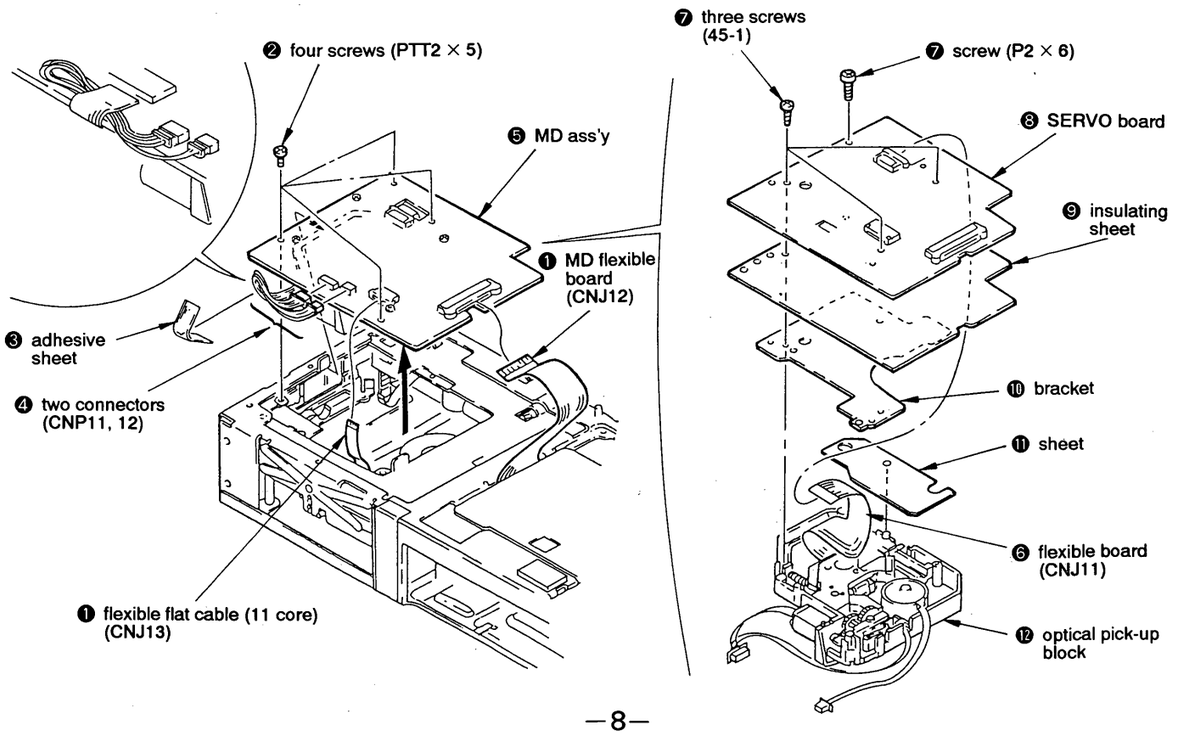
MECHANISM DECK



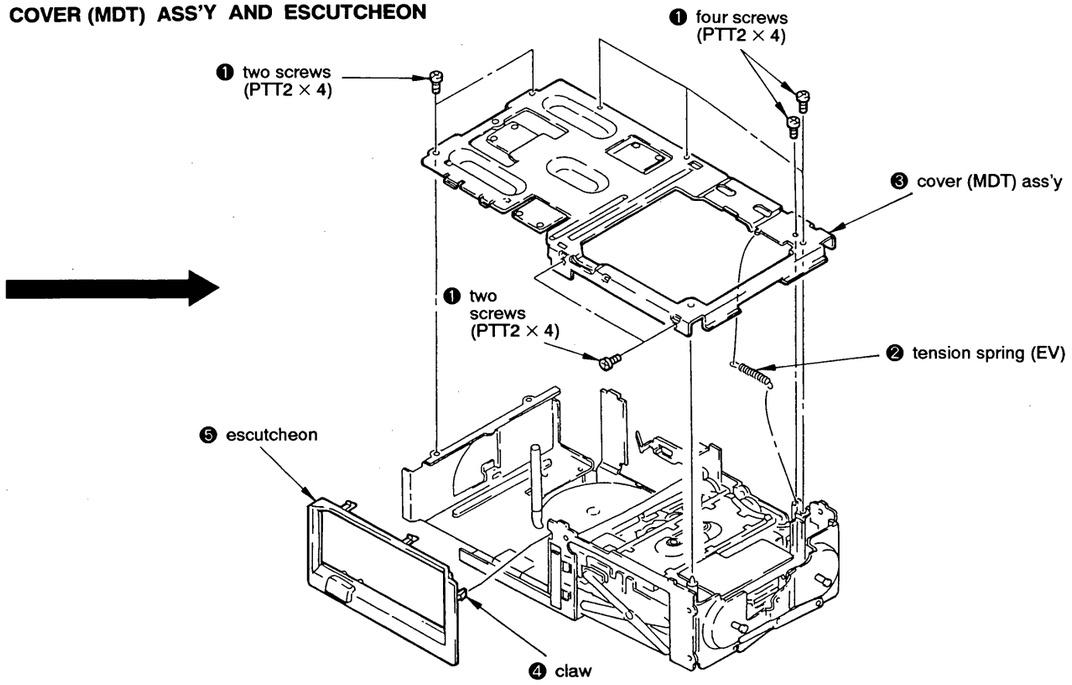
MD BOARD


❶ MD flexible board (CNJ12)
❹ ground point screw
❹ two screws (PTT2 × 5)
❹ screw (ground)
❻ MD board
❺ connector (CNP981)
❸ bracket (TR)
❷ screw (PTT2 × 4)

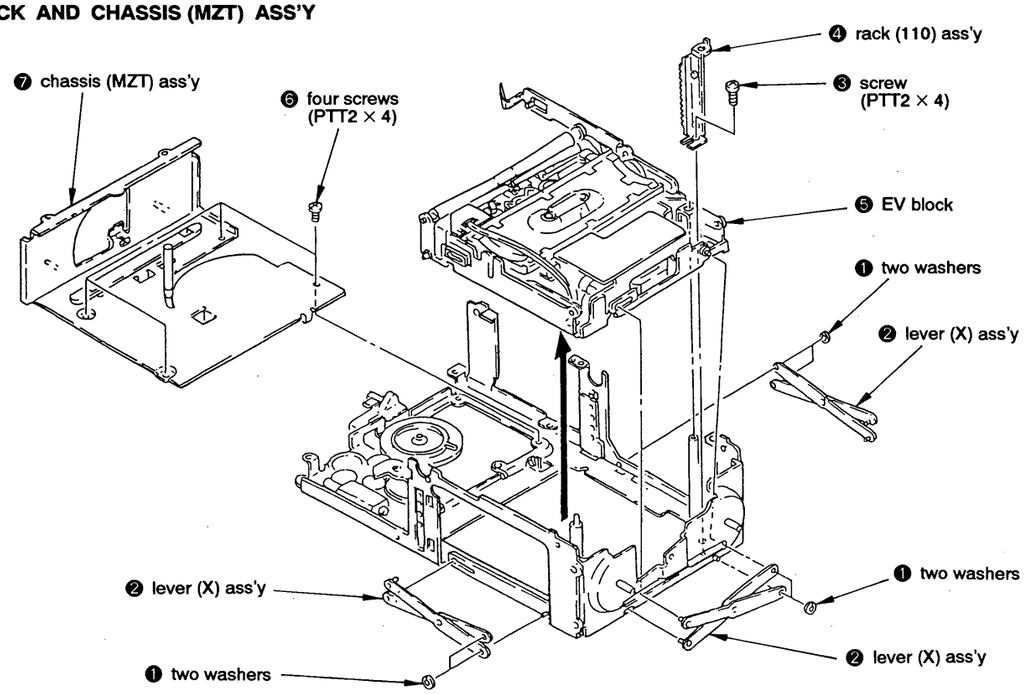
SERVO BOARD AND OPTICAL PICK-UP BLOCK


❷ four screws (PTT2 × 5)
❺ MD ass'y
❶ MD flexible board (CNJ12)
❸ adhesive sheet
❹ two connectors (CNP11, 12)
❶ flexible flat cable (11 core) (CNJ13)
❼ three screws (45-1)
❼ screw (P2 × 6)
❽ SERVO board
❾ insulating sheet
❿ bracket
⓫ sheet
❻ flexible board (CNJ11)
⓬ optical pick-up block

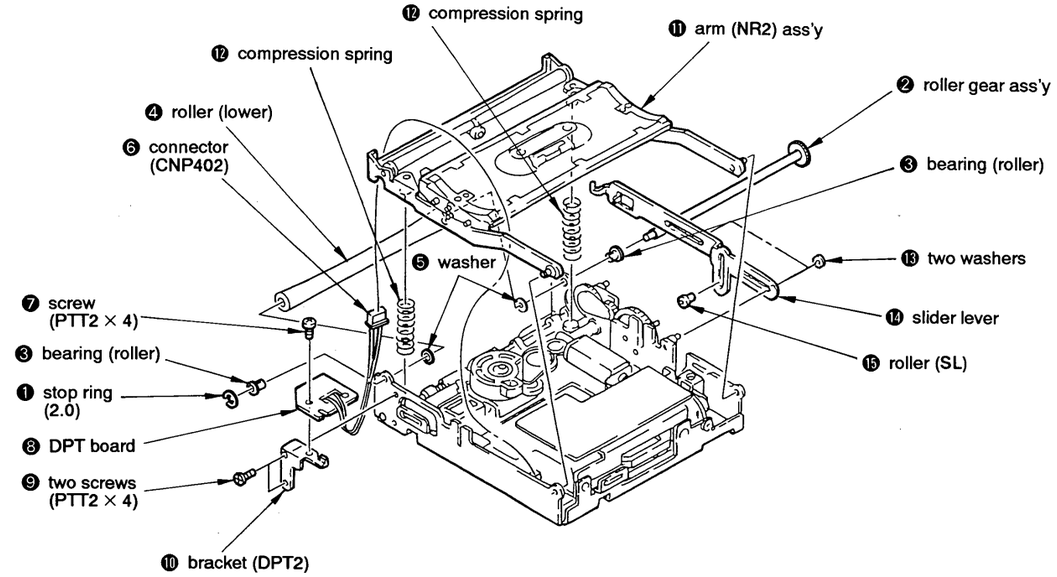
COVER (MDT) ASS'Y AND ESCUTCHEON



EV BLOCK AND CHASSIS (MZT) ASS'Y



ROLLER (LOWER), DPT BOARD AND ARM (NR2) ASS'Y



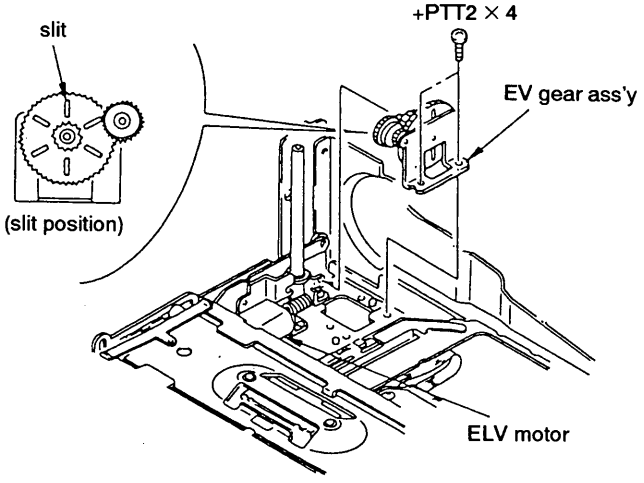
SECTION 3
MECHANICAL ADJUSTMENT

Elevator Height Adjustment

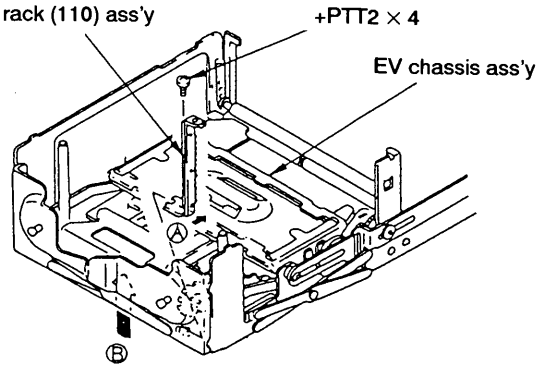
This adjustment should be done when replacing the rack assembly on the parts related to it.

Procedure:

1. Fit the EV gear assembly after adjusting its slit position as shown in the figure. (When the slit position is out of order after fitting, it can be adjusted finely by turning the worm gear of the ELV motor.)



2. Fit the rack assembly putting it in the arrow Ⓐ direction. At this time insert a spacer (approx. 1 mm thickness) or fit the rack assembly while pushing the EV chassis assembly in the arrow Ⓑ direction.



Note: When this adjustment is out of order, it doesn't operate normally and the roaring of the motor can be heard. In this case adjust again.

SECTION 4
ELECTRICAL ADJUSTMENTS

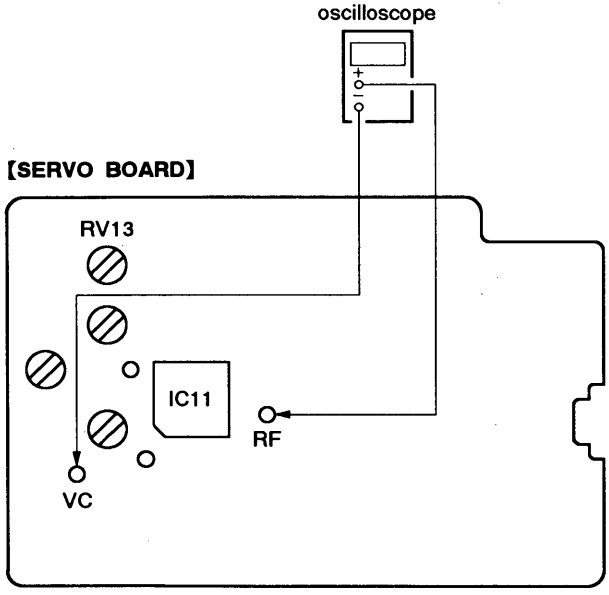
COMPACT DISC CHANGER

(CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)

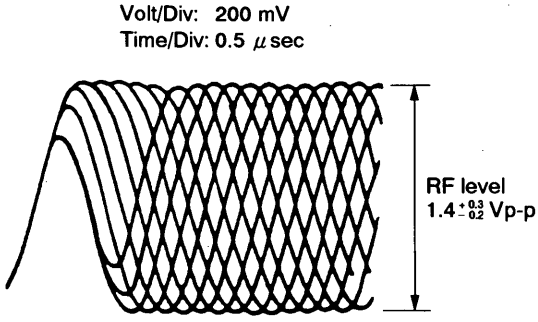
1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code: 3-702-101-01, but only when indicated.
3. Power supply voltage: DC14.4 V (more than 10 A).
4. Adjustment must be excuted whenever a board or optical block is replaced.

Focus Offset Adjustment

Procedure:

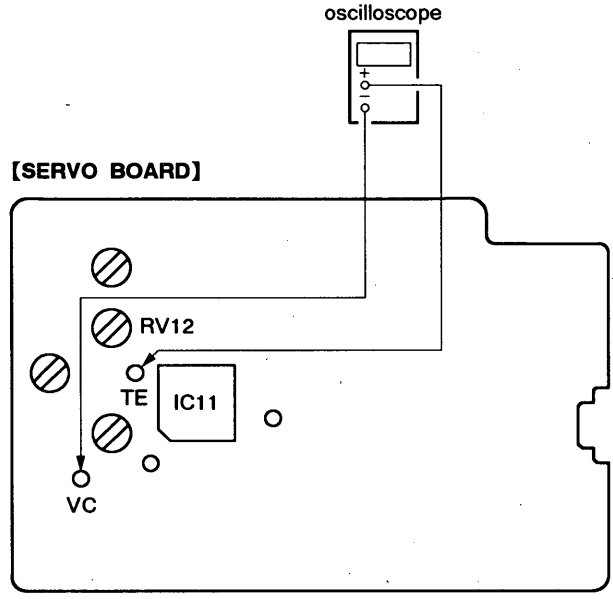


1. Connect the oscilloscope to SERVO board test point RF.
2. Put the set into play mode by loading the disc.
3. Adjust the RV13 (SERVO board) so that the waveform (eye pattern) on the oscilloscope becomes $1.4^{+0.3}_{-0.2}$ V.



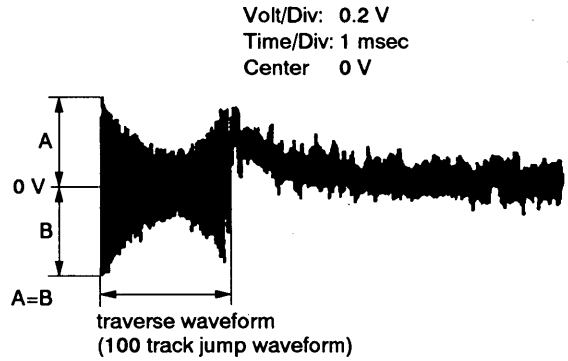
Tracking Offset Adjustment

Procedure:



1. Connect the oscilloscope to SERVO board test point TE.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ or ⏭ (◀◀ or ▶▶) button, then, check the traverse waveform*.
4. Adjust RV12 (SERVO board) so that oscilloscope reading is symmetrical in relation to 0 ± 0.05 V.

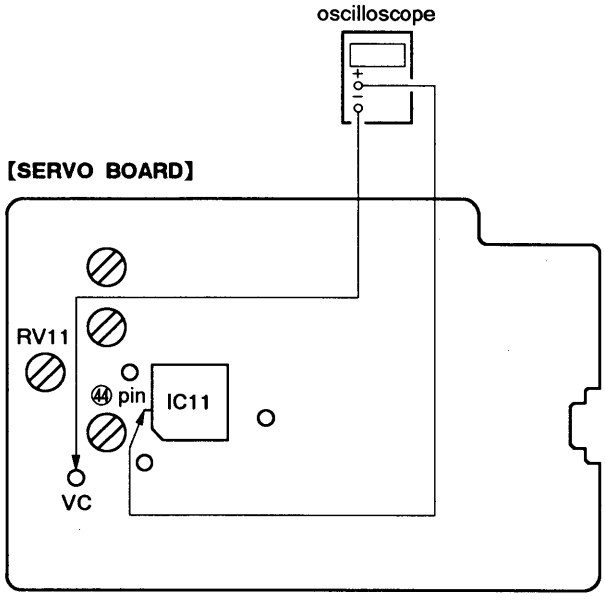
*Traverse waveform: This is the tracking error waveform appears when crossing the track.



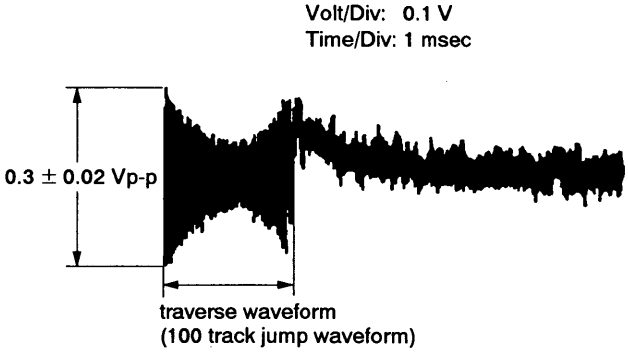
Tracking Gain Adjustment

This adjustment should be performed after focus offset and tracking offset adjustments are completed.

Procedure:



1. Connect the oscilloscope to SERVO board IC11 ㊹ pin.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ or ⏭ (◀◀ or ▶▶) button, and adjust the RV11 (SERVO board) so that the traverse waveform becomes 0.3 ± 0.02 V.



Focus Gain Adjustment

This adjustment is not performed.
If focus gain VR RV14 is turned, set to mechanical center.

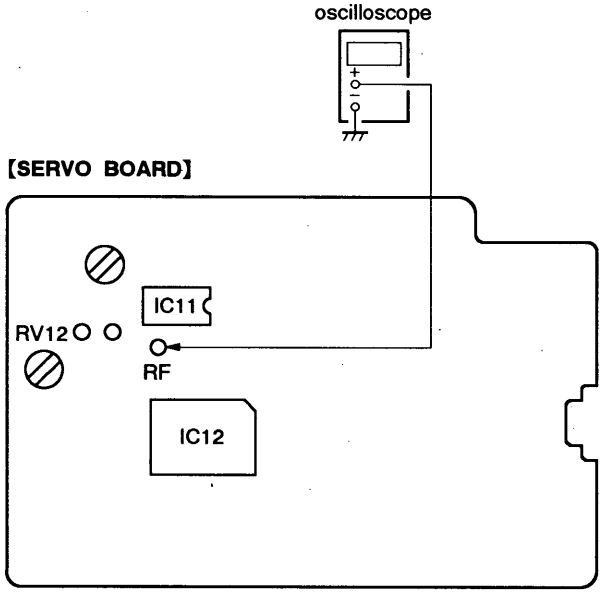
COMPACT DISC CHANGER

(CDX-52RF: US, Canadian)

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code : 3-702-101-01, but only when indicated.
3. Power supply voltage : DC 14.4 V (more than 3A).

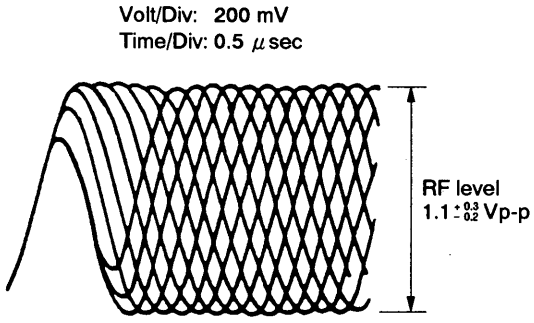
Focus Offset Adjustment

Procedure:



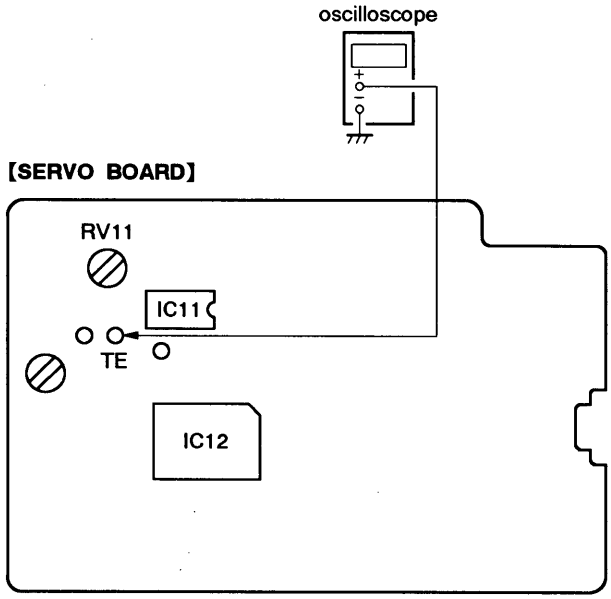
1. Connect the oscilloscope to SERVO board test point RF, pin ㉖ of IC12.
2. Put the set into play mode by loading the disc.
3. Adjust (SERVO board) RV12 so that waveform on the oscilloscope (eye pattern) is good.

(A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.)



Tracking Offset Adjustment

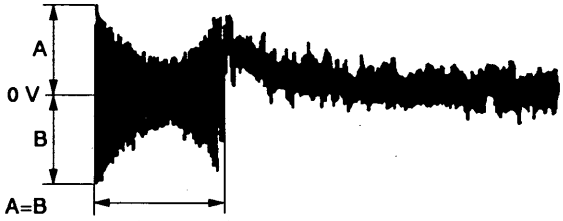
Procedure:



1. Connect the oscilloscope to SERVO board test point TE, pin ⑭ of IC11.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ or ⏭ button, then, check the traverse waveform.*
4. Adjust RV11 (SERVO board) so that the oscilloscope reading is symmetrical in relation to 0 V.

*Traverse waveform : This is the tracking error waveform appears when crossing the track.

Volt/Div: 0.2 V
Time/Div: 2 msec
Center 0 ± 0.05 V



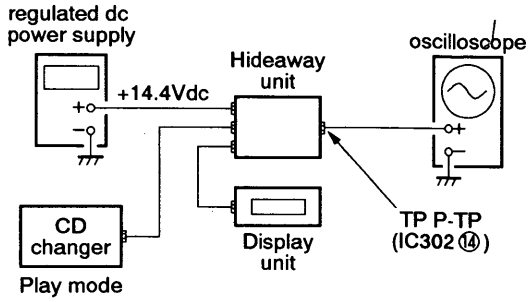
traverse waveform
(100 track jump waveform)

HIDEAWAY UNIT (CDX-52RF)

Note: Don't move VR302 on replacing ICs or others.

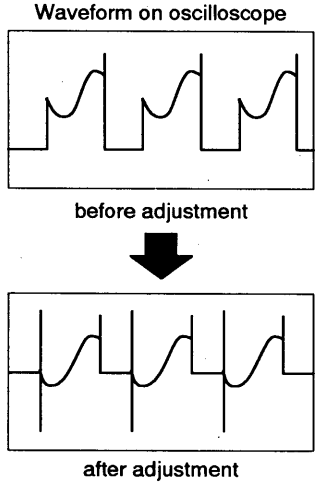
DC Balance Adjustment

Connection:

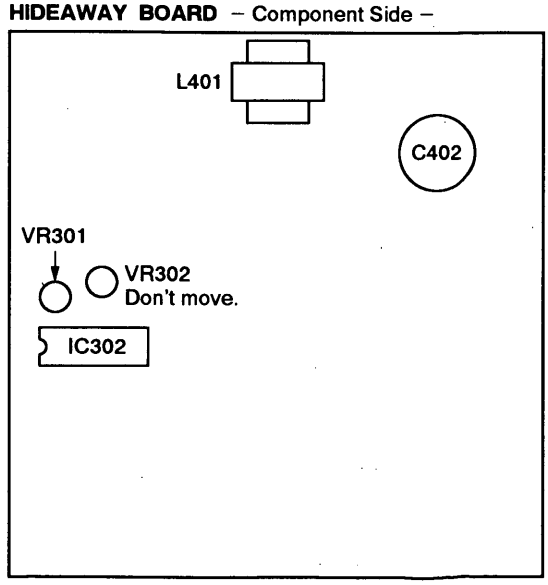


Procedure:

1. Adjust with VR301 so that the 38 kHz signal leakage becomes minimum.



Adjustment Location:

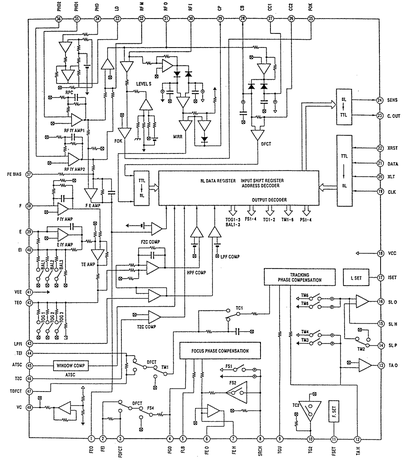


SECTION 5
DIAGRAMS

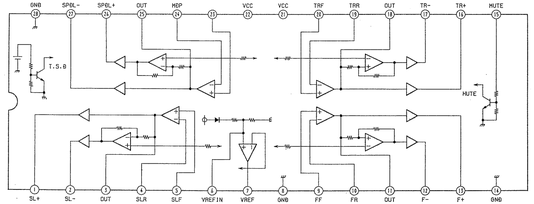
● IC Block Diagrams

– COMPACT DISC CHANGER SECTION –

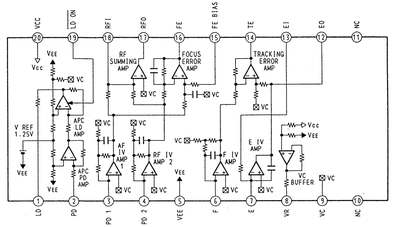
IC11 CXA1782BQ (CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)



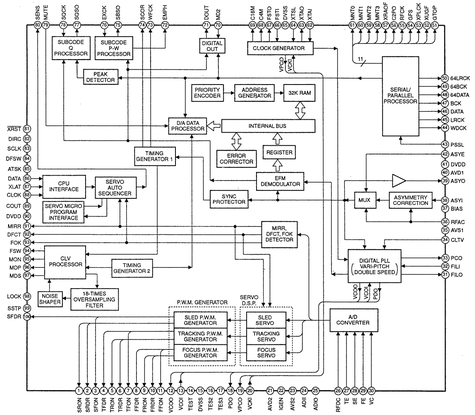
IC13 BA6297AFP



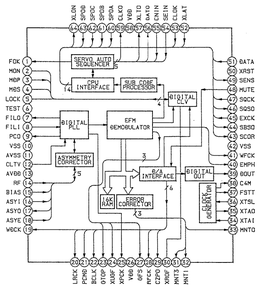
IC11 CXA1571N (CDX-52RF: US, Canadian)



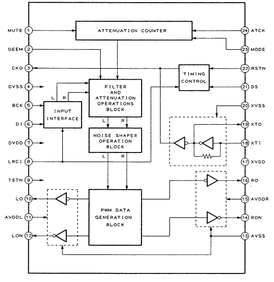
IC12 CXD2515Q (CDX-52RF: US, Canadian)



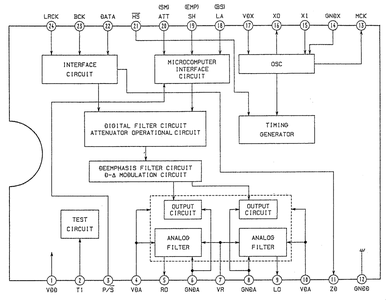
IC12 CXD2507AQ
(CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)



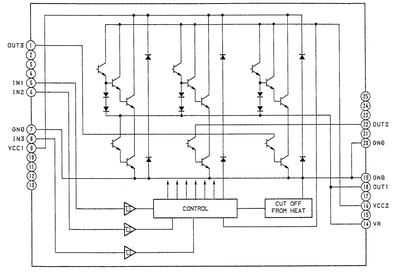
IC16 SM5874AM-ET (CDX-52RF: US, Canadian)



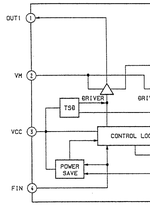
IC16 TC9404FN-EL (CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)



IC501 BA6247FP-Y

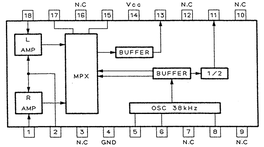


IC951 BA6287F

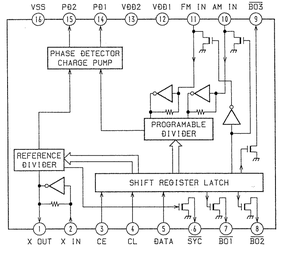


– HIDEAWAY SECTION –

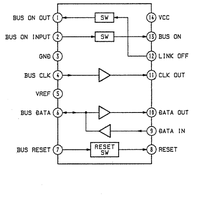
IC302 BA1405



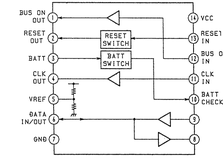
IC303 LM7001M



IC981 MM1284XFFE



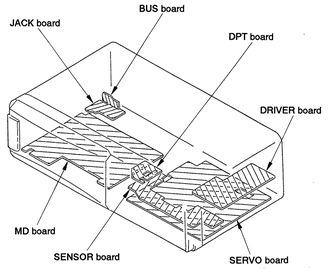
IC601 MM1175XF



5-1. COMPACT DISC CHANGER SECTION PRINTED WIRING BOARDS (CDX-52, CDX-52RF: AEP, UK, German, E, Talwan)

SEE ADDITIONAL INFORMATION

• **Circuit Boards Location**

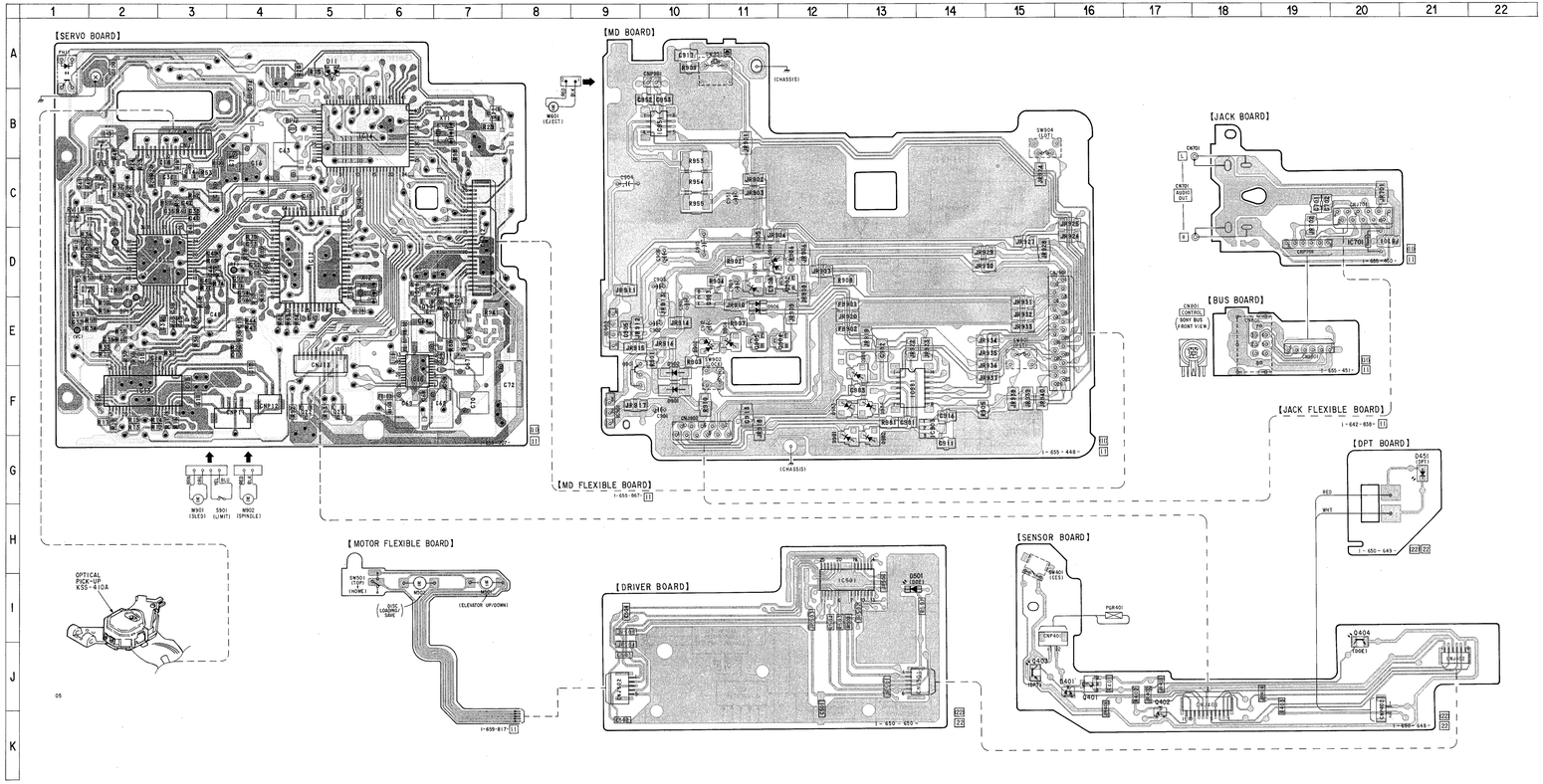


• **Semiconductor Location**

Ref. No.	Location
D11	A-5
D401	J-16
D451	G-21
D501	I-13
D901	F-10
D902	F-10
D903	E-10
D904	E-11
D905	D-11
D906	E-11
D907	D-11
D981	G-12
D982	G-13
D983	F-12
D984	F-13
D986	F-13
IC11	D-3
IC12	D-5
IC13	F-2
IC14	B-5
IC16	F-6
IC501	I-12
IC701	D-20
IC901	F-9
IC902	E-9
IC903	F-14
IC951	B-10
IC981	F-13
Q11	B-7
Q14	C-3
Q16	D-6
Q17	D-6
Q19	E-6
Q20	E-7
Q22	F-5
Q23	F-5
Q401	J-16
Q402	K-17
Q403	J-15
Q404	I-20
Q901	F-9
Q902	D-12
Q903	E-10
Q904	E-12
Q905	E-11

Note on Printed Wiring Board:

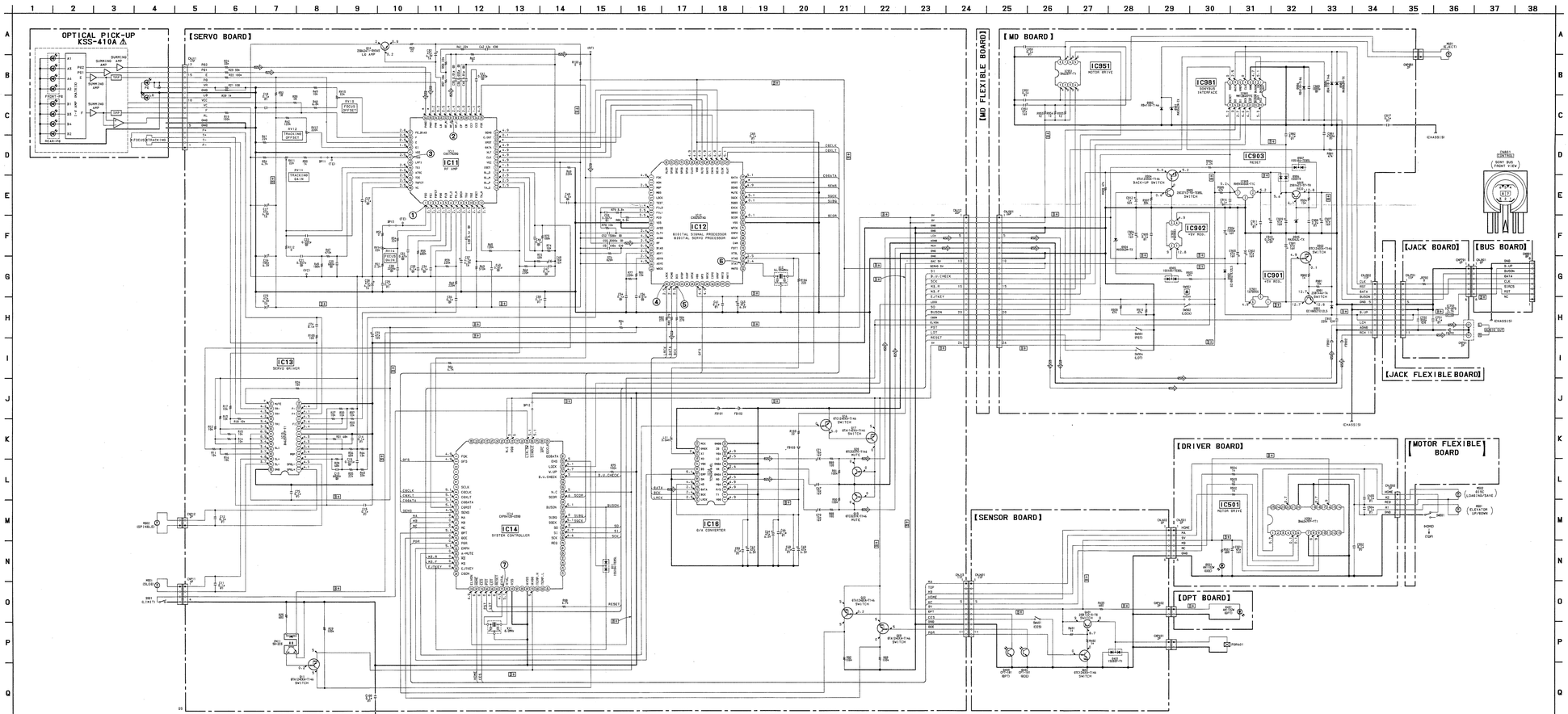
- ○——— : parts extracted from the component side.
- ● : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern of the rear side.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)



5-2. COMPACT DISC CHANGER SECTION SCHEMATIC DIAGRAM (CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)

• See page 15 for IC Block Diagrams.

SEE ADDITIONAL INFORMATION



Note on Schematic Diagram:

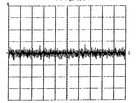
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

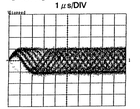
- B + : B + Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CD changer controller.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

• Waveforms

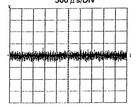
❶ IC11 ⑦ 200V/DIV 500 μs/DIV



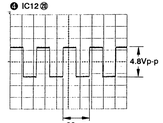
❷ IC11 ⑩ 500mV/DIV 1 μs/DIV



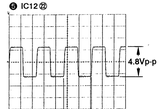
❸ IC11 ㉔ 200mV/DIV 500 μs/DIV



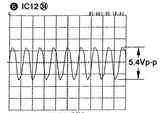
❹ IC12 ㊽



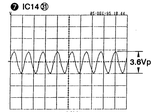
❺ IC12 ㊾



❻ IC12 ㊿

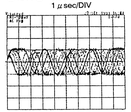


❼ IC14 ㊶

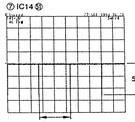


• Waveforms

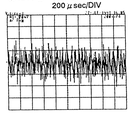
① IC11 ⑰ 0.5V/DIV
1 μ sec/DIV



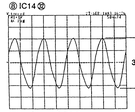
⑦ IC14 ㊽



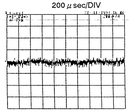
② IC11 ⑯ 0.2V/DIV
200 μ sec/DIV



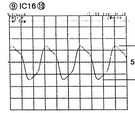
⑧ IC14 ㊾



③ IC11 ⑮ 0.2V/DIV
200 μ sec/DIV

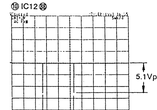


⑥ IC16 ⑬

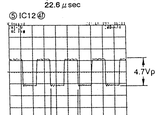


④ IC12 ㊻

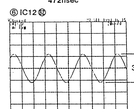
⑨ IC12 ㊽



⑤ IC12 ㊼

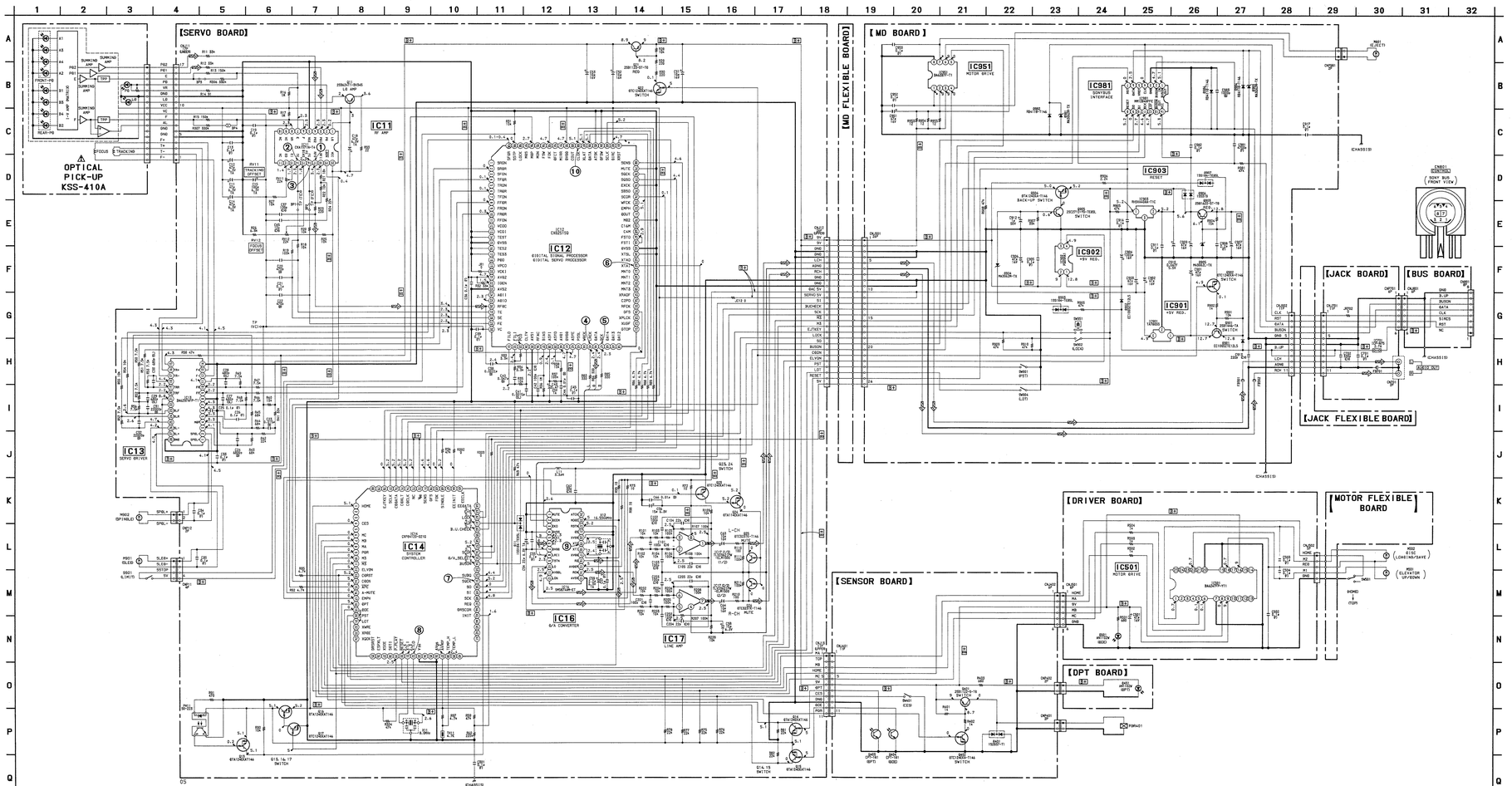


⑤ IC12 ㊼



5-3. COMPACT DISC CHANGER SECTION SCHEMATIC DIAGRAM (CDX-52RF: US, Canadian)

• See page 15 for IC Block Diagrams.



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B + Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CD changer controller.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

5-4. COMPACT DISC CHANGER SECTION PRINTED WIRING BOARDS (CDX-52RF: US, Canadian)

• See page 19 for Circuit Boards Location.

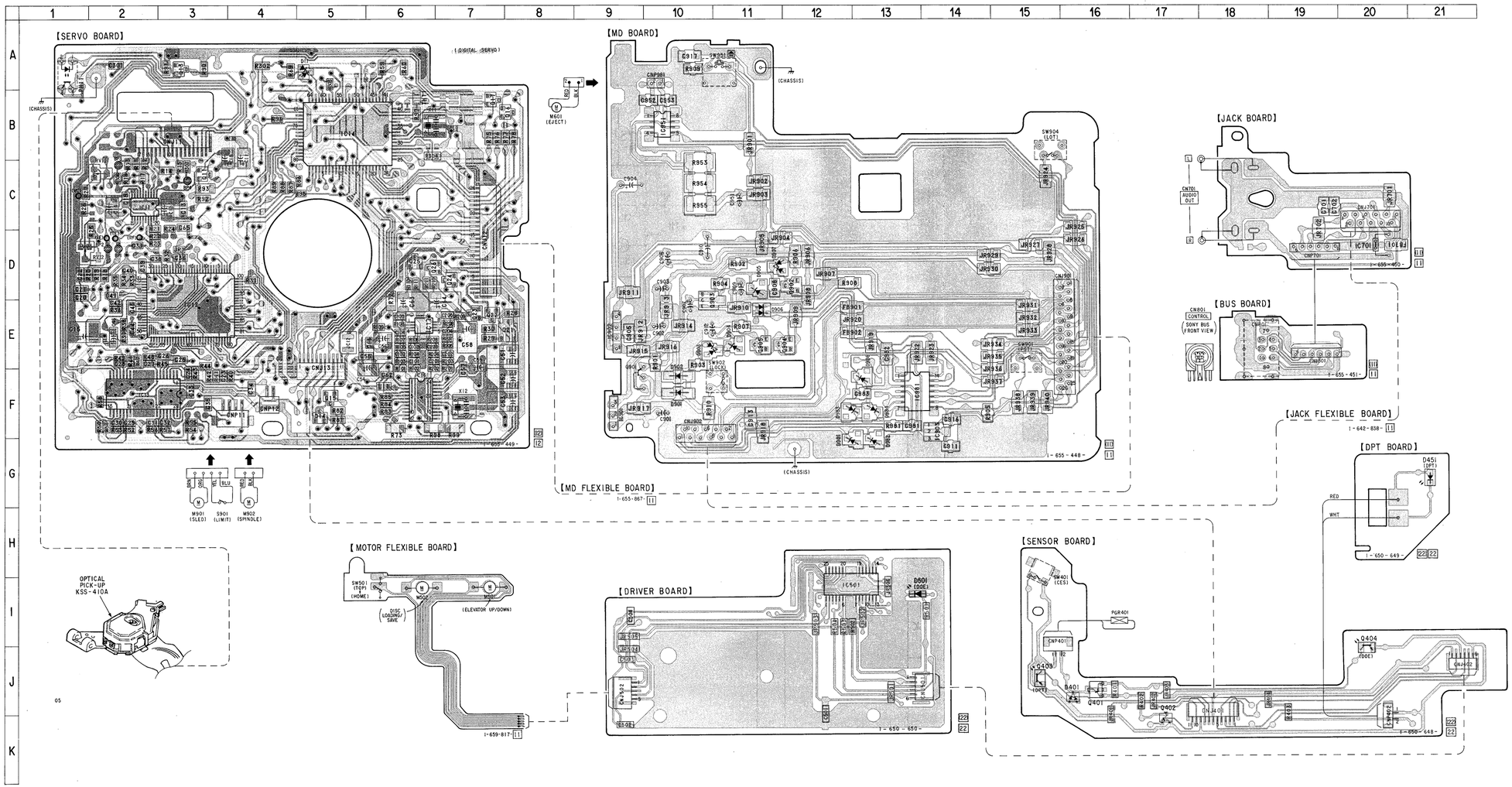
• **Semiconductor Location**

Ref. No.	Location
D11	A-5
D401	J-16
D451	G-21
D501	I-13
D901	F-10
D902	F-10
D903	E-10
D904	E-11
D905	D-11
D906	E-11
D907	D-11
D981	G-12
D982	G-13
D983	F-12
D984	F-13
D986	F-13
IC11	C-2
IC12	E-3
IC13	F-2
IC14	B-5
IC16	F-6
IC17	E-6
IC501	I-12
IC701	D-20
IC901	F-9
IC902	E-9
IC903	F-14
IC951	B-10
IC981	F-13
Q11	C-3
Q13	A-3
Q14	F-5
Q15	F-5
Q16	B-7
Q17	B-7
Q21	E-8
Q22	E-7
Q23	E-7
Q24	D-7
Q25	D-6
Q26	D-6
Q401	J-16
Q402	K-17
Q403	J-15
Q404	I-20
Q901	F-9
Q902	D-12
Q903	E-10
Q904	E-12
Q905	E-11

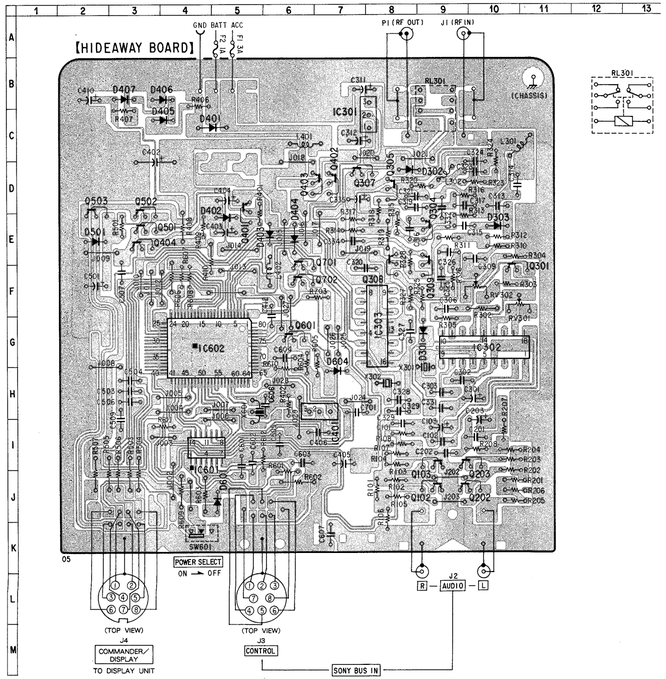
Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ● : Through hole.
- △ : internal component.
- ▨ : Pattern of the rear side.
- ▩ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)



5-5. HIDEAWAY SECTION PRINTED WIRING BOARD



- **Semiconductor Location**

Ref. No.	Location
D301	G-9
D302	D-8
D303	E-10
D401	C-4
D402	E-5
D403	E-6
D404	E-6
D405	C-4
D406	B-4
D407	B-3
D501	E-2
D601	J-5
D604	H-7
IC301	C-7
IC302	G-10
IC303	F-8
IC401	H-7
IC601	I-4
IC602	G-4
Q102	J-9
Q103	I-9
Q202	J-9
Q203	I-9
Q301	F-10
Q304	E-9
Q305	D-8
Q307	D-7
Q308	E-8
Q309	F-9
Q401	D-5
Q402	D-7
Q403	D-6
Q404	E-3
Q501	E-3
Q502	D-3
Q503	D-2
Q601	G-6
Q701	F-6
Q702	F-6

Note on Printed Wiring Board:

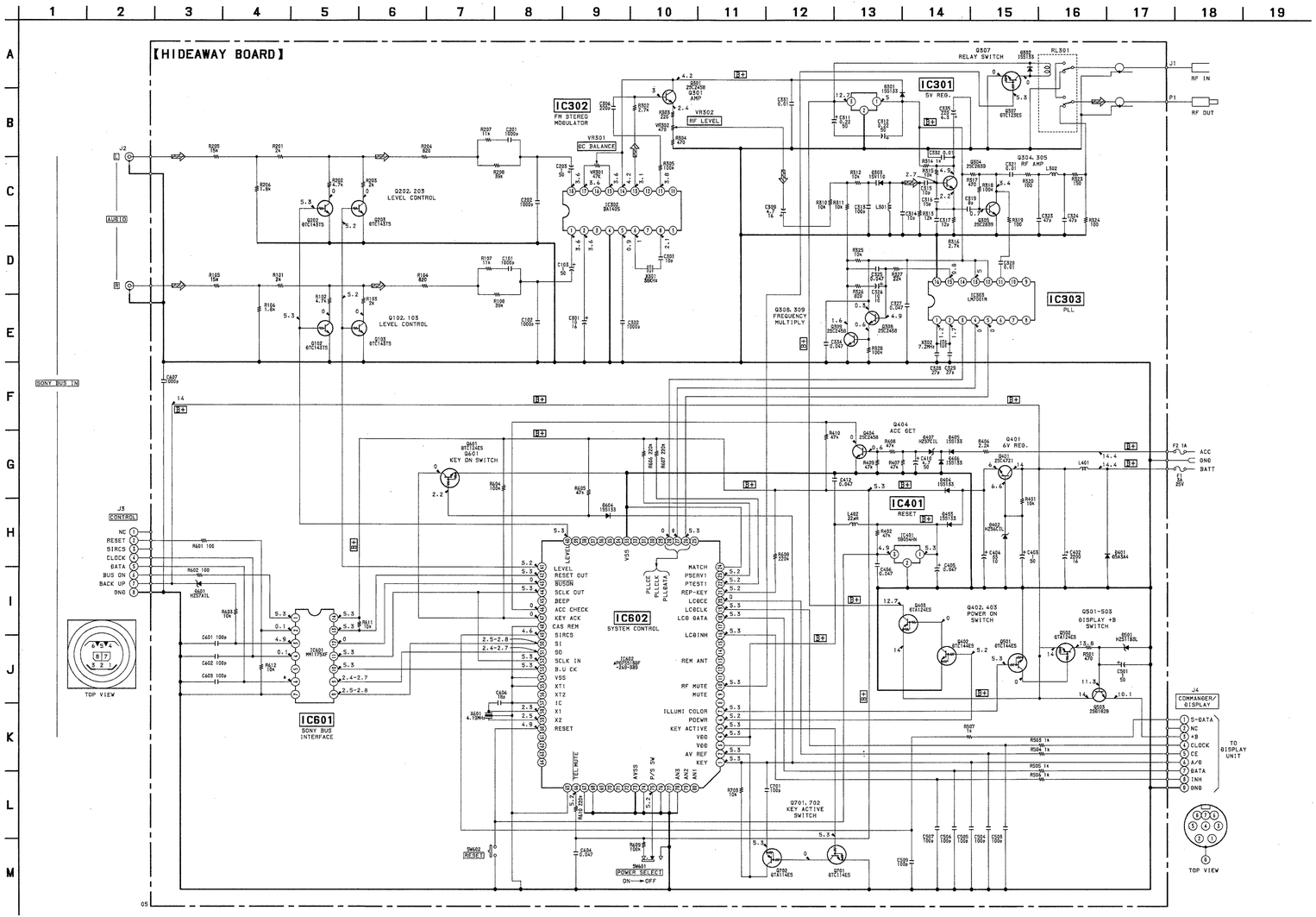
- ○——— : parts extracted from the component side.

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ▭ : panel designation.
- B + : B + Line.
- ▬ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from ACC and BATT terminals.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : CD

5-6. HIDEAWAY SECTION SCHEMATIC DIAGRAM

• See page 18 for IC Block Diagrams.



5-7. IC PIN FUNCTION DESCRIPTION

IC14 CXP84120-039Q (SYSTEM CONTROLLER) (CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)

Pin No.	Pin Name	I/O	Function
1	FOK	I	Focus OK signal input
2	GFS	I	Guarded frame sync input
3		—	Not used
4		—	Not used
5		—	Not used
6		—	Not used
7	SCLK	—	Not used
8	CDCLK	O	Servo system control output
9	CDXLT	O	Servo system control output
10	CDDATA	O	Servo system control output
11	CDRST	O	Servo system reset . "L" : reset
12	SENS	I	Sense signal input
13	MA	O	Motor control (M501, M502)
14	MB	O	Motor control (M501, M502)
15	MC	O	Motor control (M501, M502)
16	DPT	I	Disc movement detect sensor input
17	DOE	I	Disc Pick-up position detect sensor input. Disc is above pick-up : "L"
18	PGR	O	Plunger control
19	EMPH	O	Emphasis control
20	A-MUTE	O	Audio output mute
21	$\overline{M3}$	O	Eject motor control
22	M3	O	Eject motor control
23	EJTKEY	I	Eject key input. "L" : on
24	CDON	—	Not used
25	ELVON	O	Elevator up/down, sensor power control
26	$\overline{HOME}$	I	HOME sensor input
27	$\overline{CES}$	I	Chucking end detect sensor input
28	$\overline{PST}$	I	Magazine set detect sensor input
29	$\overline{LOT}$	I	Lever open detect sensor input
30	$\overline{RESET}$	I	System reset. "L" : reset
31	EXTAL	O	System clock output
32	XTAL	I	System clock input
33	VSS	—	GND
34		—	Not used
35		—	Not used
36	AVSS	—	A/D converter GND
37	AVDD	—	Power supply
38	TEMP.H	—	Not used
39	TEMP.L	—	Not used
40		—	Not used
41		—	Not used
42		—	Not used
43		—	Not used

Pin No.	Pin Name	I/O	Function
44		—	Not used
45		—	Not used
46		—	Not used
47	REQ	—	Not used
48	SCK	I	Serial clock input
49	SI	I	Serial data input
50	SO	O	Serial data output
51	SQCK	O	Clock for SUBQ read output
52	SUBQ	I	SUBQ data input
53		—	Not used
54	BUSON	I	"L" during controller communicating
55		—	Not used
56	SCOR	I	Sub-code sync detecting signal input
57	N.C	—	Not used
58		—	Not used
59		—	Not used
60	B.U.CHECK	I	back up detection input. "H" : back up on
61	W.UP	I	External timer/counter input
62	LOCK	I	During locking magazine :"H"
63	EHS	I	Elevator location detection
64	EEDATA	—	Not used
65	EECLK	—	Not used
66	$\overline{\text{APC}}$	—	Not used
67		—	Not used
68	$\overline{\text{SINGLE}}$	—	Not used
69	$\overline{\text{LIM.SW}}$	I	Limit switch key input
70		—	Not used
71		—	Not used
72	VDD	—	Power supply
73	N.C	—	Not used
74		—	Not used
75		—	Not used
76		—	Not used
77		—	Not used
78		—	Not used
79		—	Not used
80		—	Not used

IC14 CXP84120-021Q (SYSTEM CONTROLLER) (SERVO BOARD) (CDX-52RF: US, Canadian)

Pin No.	Pin Name	I/O	Function
1	$\overline{\text{HOME}}$	I	HOME sensor input
2		—	Not used
3		—	Not used
4	$\overline{\text{CES}}$	I	Chucking end detect sensor input
5		—	Not used
6	MC	O	Motor control (M501, M502)
7	MB	O	Motor control (M501, M502)
8	MA	O	Motor control (M501, M502)
9	PGR	O	Plunger control
10	M3	O	Eject motor control
11	$\overline{\text{M3}}$	O	Eject motor control
12	ELVON	O	Elevator up/down, sensor power control
13	CDRST	O	Servo system reset . "L" : reset
14	CDON	O	Servo system power on/off. "H": on
15	$\overline{\text{APC}}$	O	Laser on/off control. "L": Laser on.
16	A-MUTE	O	Audio output mute
17	EMPH	O	Emphasis control
18	DPT	I	Disc movement detect sensor input
19	DOE	I	Disc Pick-up position detect sensor input. Disc is above pick-up : "L"
20	$\overline{\text{PST}}$	I	Magazine set detect sensor input
21	$\overline{\text{LOT}}$	I	level open detect sensor input
22	XWRE	—	Not used
23	XRDE	—	Not used
24	XQOK	—	Not used
25	GRSRST	—	Not used
26	ESPXLT	—	Not used
27	XSOE	—	Not used
28	SDTI	—	Not used
29	P.PLAY	I	Program play select. "H": Program play cannot be used.
30	$\overline{\text{RESET}}$	I	System reset. "L": reset
31	XTLI	O	System clock output
32	XTLO	I	System clock input
33	VSS	—	GND
34		—	Not used
35		—	Not used
36	AVSS	—	A/D converter GND
37	AV REF	I	A/D converter refrence voltage input.
38	TEMP.H	I	High temperature detection (For servo gain correction)
39	TEMP.L	—	Not used
40		—	Not used
41		—	Not used
42		—	Not used
43		—	Not used

Pin No.	Pin Name	I/O	Function
44		—	Not used
45	INIT	I	Initialize
46	GRSCOR	—	Not used
47	REQ	—	Not used
48	SCK	I	Serial clock input
49	SI	I	Serial data input
50	SO	O	Serial data output
51	SQCK	O	Clock for SUBQ read output
52	SUBQ	I	SUBQ data input
53		—	Not used
54	BUSON	I	"L" during controller communicating
55	DIA SELECT	I	Digital/Analog selection. "H": Analog (Not used)
56	SCOR	I	Sub-code sync detecting signal input
57	N.C	—	Not used
58		—	Not used
59		—	Not used
60	B.U.CHECK	I	back up detection input. "H" : back up on
61	W.UP	I	External timer/counter input
62	LOCK	I	During locking magazine :"H"
63	EHS	I	Elevator location detection
64	EEDATA	I/O	External 16 bits timer/counter input/output (Not used)
65	EECLK	O	14 bits pulse width modulation output (Not used)
66	EEINIT	I	EEPROM initializing input. "H": Format (GND)
67		—	Not used
68	$\overline{\text{SINGLE}}$	—	Not used
69	FOK	I	Focus OK signal input
70	GFS	I	Guarded frame sync input
71	SENS	I	Sense signal input
72	VDD	—	Power supply
73	N.C	—	Not used
74	CDCLK	O	Servo system control output
75	CDXLT	O	Servo system control output
76	CDDATA	O	Servo system control output
77	SCLK	O	Clock for serial communication output
78	EJTKEY	I	Eject key input. "H" : on
79		—	Not used
80		—	Not used

IC501 (BA6247FP-Y) MOTOR DRIVER IC OPERATION

The elevator motor connected between Pin ① and Pin ⑱ of IC51 is as M501, and the disc loading/saving motor connected between Pin ⑱ and Pin ㉒ of IC501 is as M502.

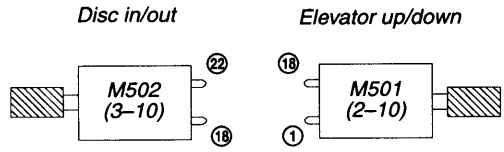
When the IC port logic is Pin ① > ⑱, Pin ㉒ > ⑱, the rotating direction of M501 and M502 becomes normal.

ROTATION TRUTH TABLE

① When MB = MC, both M501 and M502 are stop. (MA value is free.)

② When MB ≠ MC:

MA Pin ⑬	MB Pin ⑭	MC Pin ⑮	M501	M502	Motor Terminal			Operation
					①	㉒	⑱	
L	L	H	Reverse	Stop	L	OPEN	H	Elevator UP
H	L	H	Normal	Stop	H	OPEN	L	Elevator DOWN
L	H	L	Stop	Reverse	OPEN	L	H	Disc load
H	H	L	Stop	Normal	OPEN	H	L	Disc save



IC602 μPD75516GF-616-3B9 (SYSTEM CONTROL) (HIDEAWAY BOARD)

Pin No.	Pin Name	I/O	Function
1	KEY	I	A/D button input
2	AV_{REF}	I	Reference power supply
3	V_{DD}	—	Power supply
4	V_{DD}	—	Power supply
5	KEY ACTIVE	O	Power on/$\overline{off}$ for A/D button
6	POWER	O	Used for remote out
7	ILLUMI	O	Power supply on/$\overline{off}$ to display unit
8	COLOR	—	Color selection port $\overline{amber}$/green. (not used)
9	MUTE	O	Mute port on/$\overline{off}$ on source selection
10	RFMUTE	O	RF mute
11	—	—	Not used. (open)
12	—	—	Not used. (open)
13	REM ANT	—	Output port for remote antenna. (not used)
14	—	—	Not used. (open)
15	—	—	Not used. (open)
16	LCDINH	O	Inhibit for LCD
17	—	—	Not used. (open)
18	LCDDATA	O	Data for LCD
19	LCDCLK	O	Clock for LCD
20	LCDCE	O	Chip enable for LCD
21	REP-KEY	I	$\overline{There\ is\ rep\text{-}key}$/not Initial in ($V_{DD}$)
22	PTEST1	I	Test mode initial in $\overline{nor}$/test
23	PSERVI	I	Service mode initial in $\overline{nor}$/test
24	MATCH	—	Not used. (GND)
25	—	—	Not used. (open)
26	PLLDATA	O	PLL data
27	PLLCLK	O	PLL clock
28	PLLCE	O	PLL chip enable
29	—	—	Not used. (open)
30	—	—	Not used. (open)
31	—	—	Not used. (open)
32	—	—	Not used. (open)
33	V_{SS}	—	GND
34	—	—	Not used. (open)
35	—	—	Not used. (open)
36	—	—	Not used. (open)
37	—	—	Not used. (open)
38	—	—	Not used. (open)
39	—	—	Not used. (open)
40	LEVEL	O	Output level select

Pin No.	Pin Name	I/O	Function
41	LEVEL	O	Output level select
42	RESET OUT	O	Sony bus reset port
43	BUSON	O	Sony bus bus on
44	SCLK OUT	O	Sony bus clock out
45	BEEP	—	Beep (key on beep) out. (not used)
46	ACC CHECK	I	ACC check in
47	KEY ACK	I	A/D input button on: high
48	CAS REM	I	Cassete remote in (GND)
49	SIRCS	I	SIRCS input for remote commander receiver
50	SI	I	Sony bus data in
51	SO	O	Sony bus data out
52	SCLK IN	I	Sony bus clock in
53	B.U CK	I	Port for back-up check
54	V_{SS}	—	GND
55	XT1	—	Clock out (32 kHz). (GND)
56	XT2	—	Clock in (32 kHz). (not used)
57	IC	—	GND
58	X1	O	Clock out (4.19 MHz)
59	X2	I	Clock in (4.19 MHz)
60	RESET	I	Reset in
61	—	—	Not used. (open)
62	—	—	Not used. (open)
63	—	—	Not used. (open)
64	—	—	Not used. (open)
65	—	—	Not used. (GND)
66	$\overline{\text{TEL MUTE}}$	I	Telephone mute (V_{DD})
67	—	—	Not used. (GND)
68	—	—	Not used. (GND)
69	—	—	Not used. (open)
70	—	—	Not used. (open)
71	—	—	Not used. (open)
72	—	—	Not used. (open)
73	AVss	—	GND
74	—	—	Not used. (GND)
75	P/S SW	I	Power select SW $\overline{\text{There is ACC}}$/not. (GND)
76	—	—	Not used. (GND)
77	—	—	Not used. (GND)
78	AN3	—	Not used. (GND)
79	AN2	—	A/D button in for rotary commander. (not used)
80	AN1	—	A/D button in for rotary commander. (not used)

SECTION 6
EXPLODED VIEWS

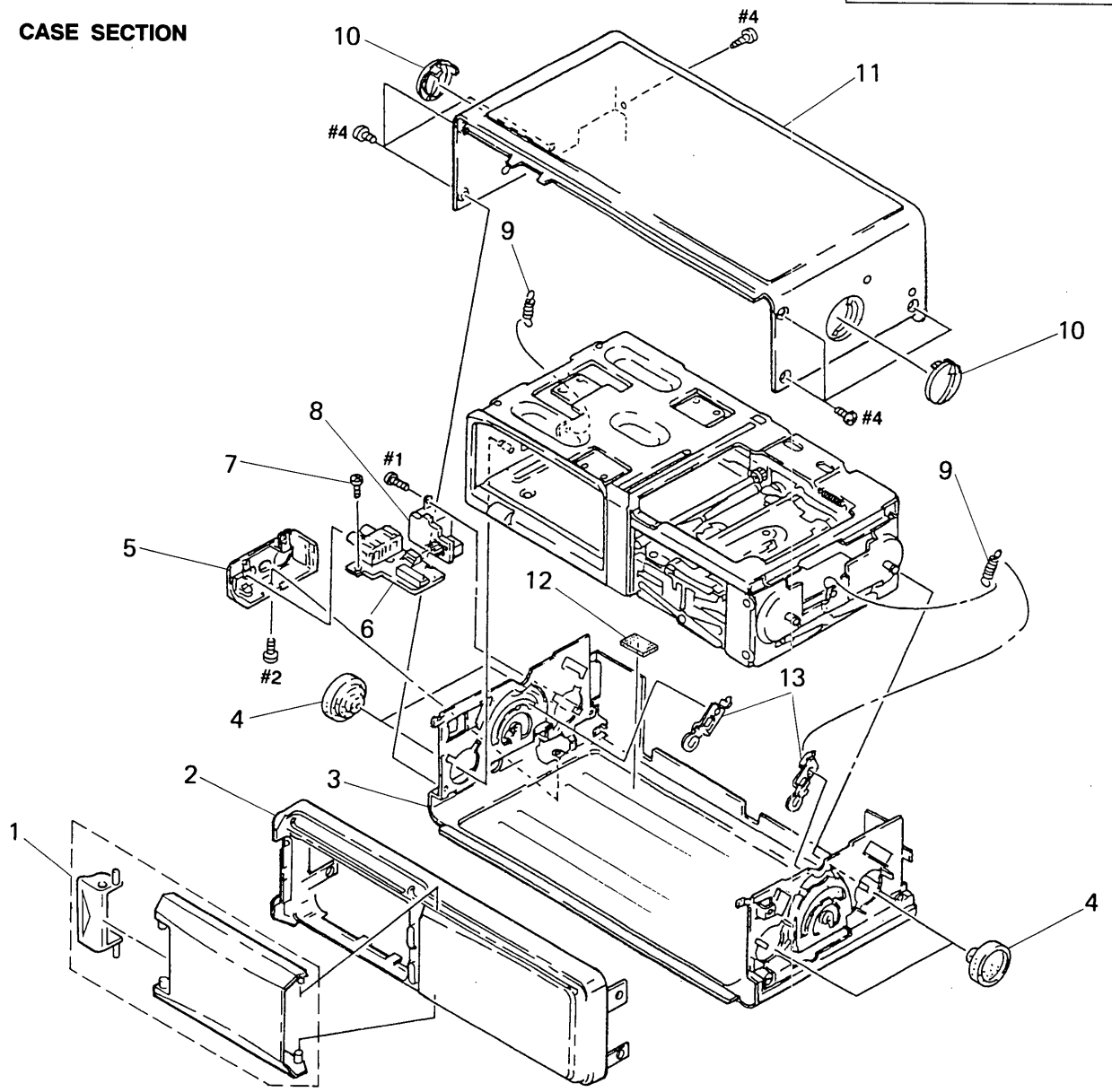
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  TW: Taiwan G: German
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

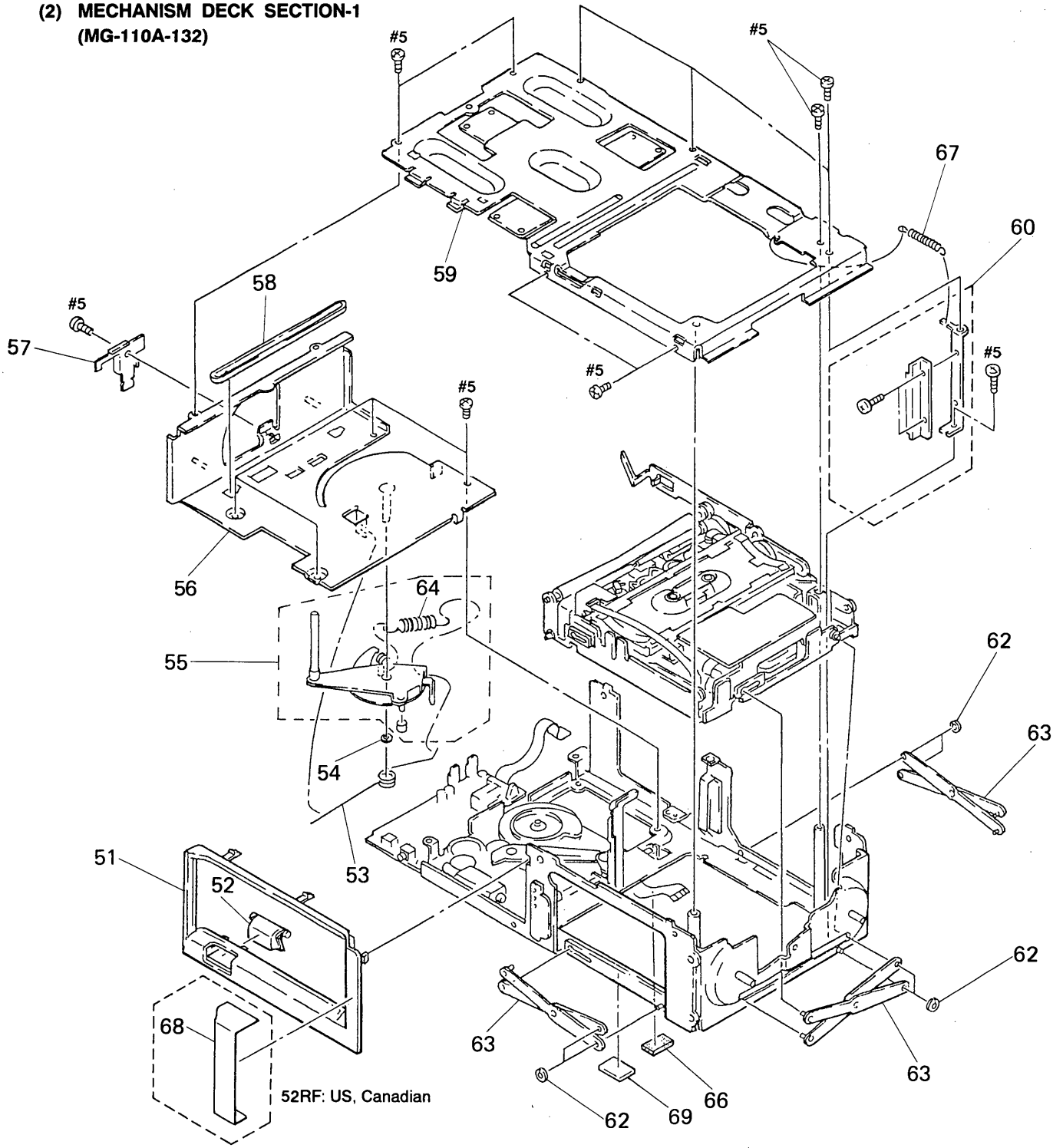
(1) CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-3369-246-1	DOOR ASSY	
2	3-918-168-71	PANEL, FRONT (52, 52RF:AEP/UK/E/TW/G)	
2	3-920-940-01	PANEL (C), FRONT (52RF:US/Canadian)	
* 3	3-919-139-01	CASE (LOWER)	
4	3-375-501-01	DAMPER (CNG)	
5	3-918-171-01	COVER (PIN)	
* 6	1-655-450-11	JACK BOARD	
7	4-908-792-31	SCREW (B2)	
* 8	1-655-451-11	BUS BOARD	
9	3-923-342-01	SPRING (FL2), TENSION	
10	3-375-504-21	LEVER (SPRING) (52, 52RF:AEP/UK/E/TW/G)	
10	3-375-504-42	LEVER (SPRING) (52RF:US/Canadian)	
* 11	3-919-138-01	CASE (UPPER)	
12	3-927-065-01	CUSHION (EJECT)	
13	X-3370-157-1	ARM (SPRING 2) ASSY	

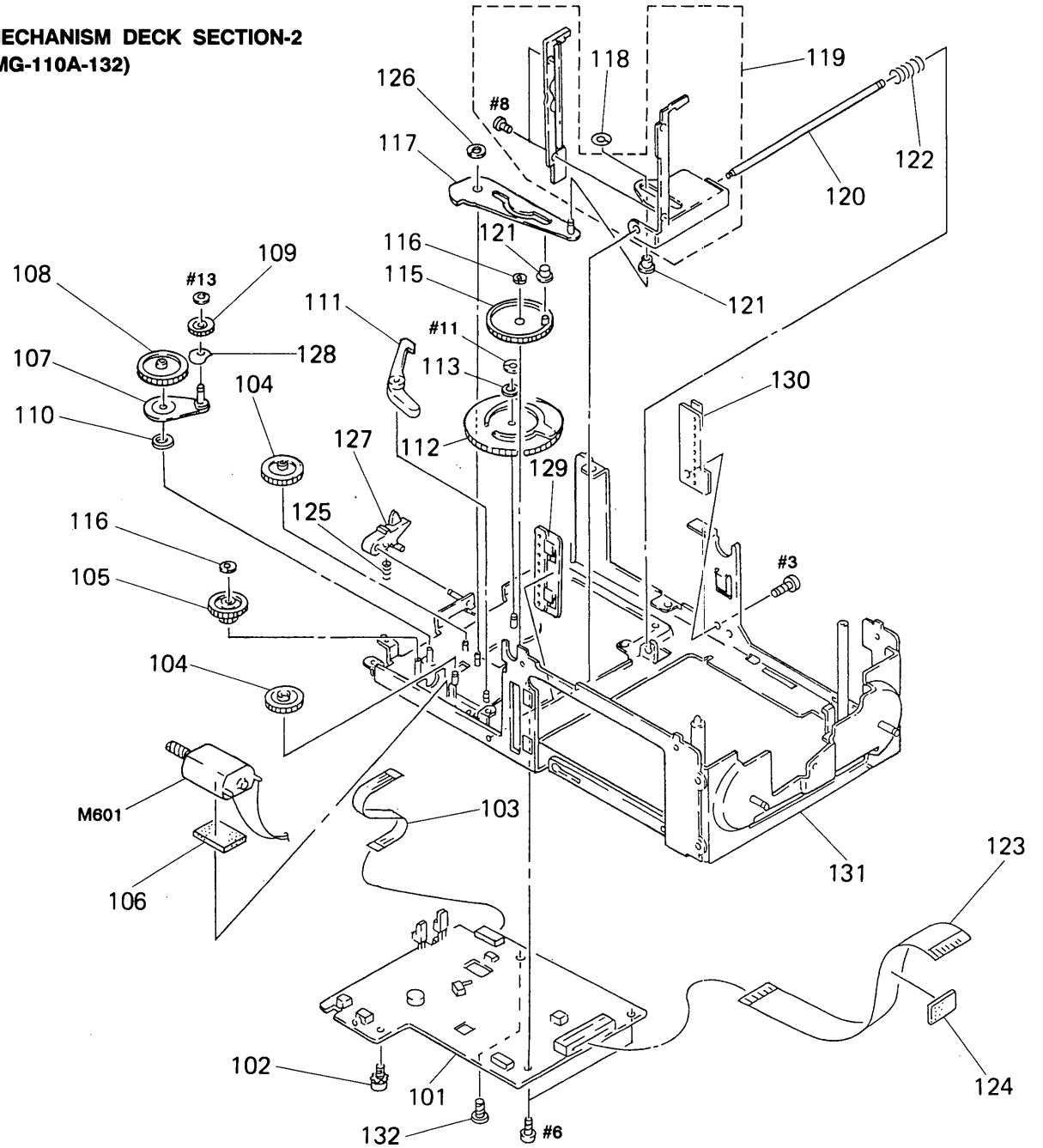
SEE ADDITIONAL INFORMATION

(2) MECHANISM DECK SECTION-1 (MG-110A-132)



Ref. No.	Part No.	Description	Remark
* 51	3-388-593-01	ESCUTCHEON (2) (52, 52RF:AEP/UK/E/TW/G)	
* 51	3-364-436-01	ESCUTCHEON (52RF:US/Canadian)	
52	3-388-592-01	BUTTON (EJ2) (⏏) (52, 52RF:AEP/UK/E/TW/G)	
52	3-364-437-01	BUTTON (EJ) (⏏) (52RF:US/Canadian)	
53	3-364-478-01	SPRING (EJ)	
54	3-911-104-01	WASHER	
55	X-3371-264-1	LEVER (NET) ASSY	
* 56	X-3371-263-1	CHASSIS (MZT) ASSY	
* 57	3-918-830-11	BRAKET (TR)	
* 58	3-911-106-01	GUIDE (MZ2)	
* 59	X-3371-266-1	COVER (MDT) ASSY	
60	X-3371-617-1	RACK (110) ASSY	
62	3-377-719-01	WASHER, POLYETHYLENE	
63	X-3362-348-1	LEVER (X) ASSY	
64	3-568-814-00	SPRING, TENSION	
66	9-911-844-XX	CUSHION, BATTERY	
67	3-931-995-01	SPRING, TENSION (EV)	
* 68	3-372-331-11	SHEET (ESCUTCHEON) (52RF:US/Canadian)	
69	3-928-691-01	CUSHION (EV)	

(3) MECHANISM DECK SECTION-2 (MG-110A-132)

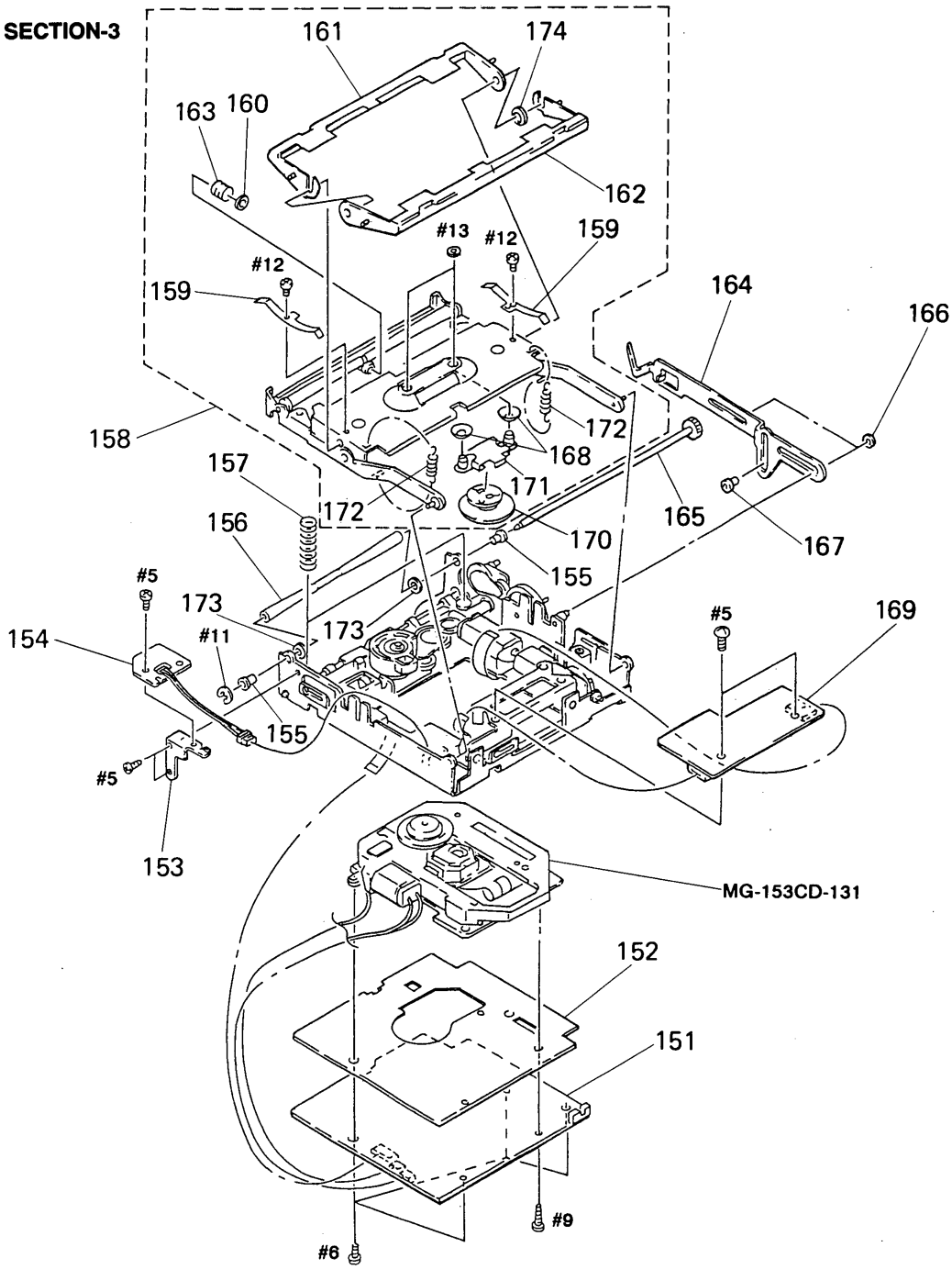


Ref. No.	Part No.	Description	Remark
* 101	A-3298-465-A	MD BOARD, COMPLETE	
102	3-376-464-11	SCREW(+PTT 2.6X6), GROUND POINT	
103	1-642-838-11	JACK FLEXIBLE BOARD	
104	3-911-076-02	GEAR (MS)	
105	3-911-090-01	WHEEL (B2), WORM	
106	3-911-105-11	CUSHION (M)	
107	X-3371-253-1	LEVER (KMZT) ASSY	
108	3-911-074-02	GEAR (L2)	
109	3-912-977-01	GEAR (KS2)	
110	3-316-308-00	WASHER	
111	3-911-083-01	ARM (DR)	
112	3-912-309-01	GEAR (EJ4), CAM	
113	3-373-013-01	SPRING (EJ CAM)	
115	3-911-096-01	GEAR (DR2)	
116	3-377-719-11	WASHER, POLYETHYLENE	
117	X-3371-256-1	LEVER (DRT) ASSY	

Ref. No.	Part No.	Description	Remark
118	3-379-490-11	WASHER, POLYETHYLENE	
119	X-3371-255-1	SLIDER (DRT) ASSY	
* 120	3-911-093-01	SHAFT (SDR2)	
121	3-364-506-01	ROLLER (SL)	
122	3-568-315-01	SPRING, COMPRESSION	
123	1-655-867-11	MD FLEXIBLE BOARD	
124	9-911-844-XX	CUSHION, BATTERY	
125	3-370-385-01	SPRING, COMPRESSION	
126	3-377-720-01	WASHER, POLYETHYLENE	
* 127	3-908-794-01	LEVER (T2) (MZ LOCK)	
128	3-364-387-11	SPRING (F)	
129	3-375-706-03	CATCHER (F)	
130	3-375-707-02	CATCHER (B)	
* 131	X-3371-254-1	CHASSIS (MDT) ASSY	
132	3-913-406-01	SCREW (GROUND)	
M601	X-3367-983-1	MOTOR ASSY (EJECT)	

SEE ADDITIONAL INFORMATION

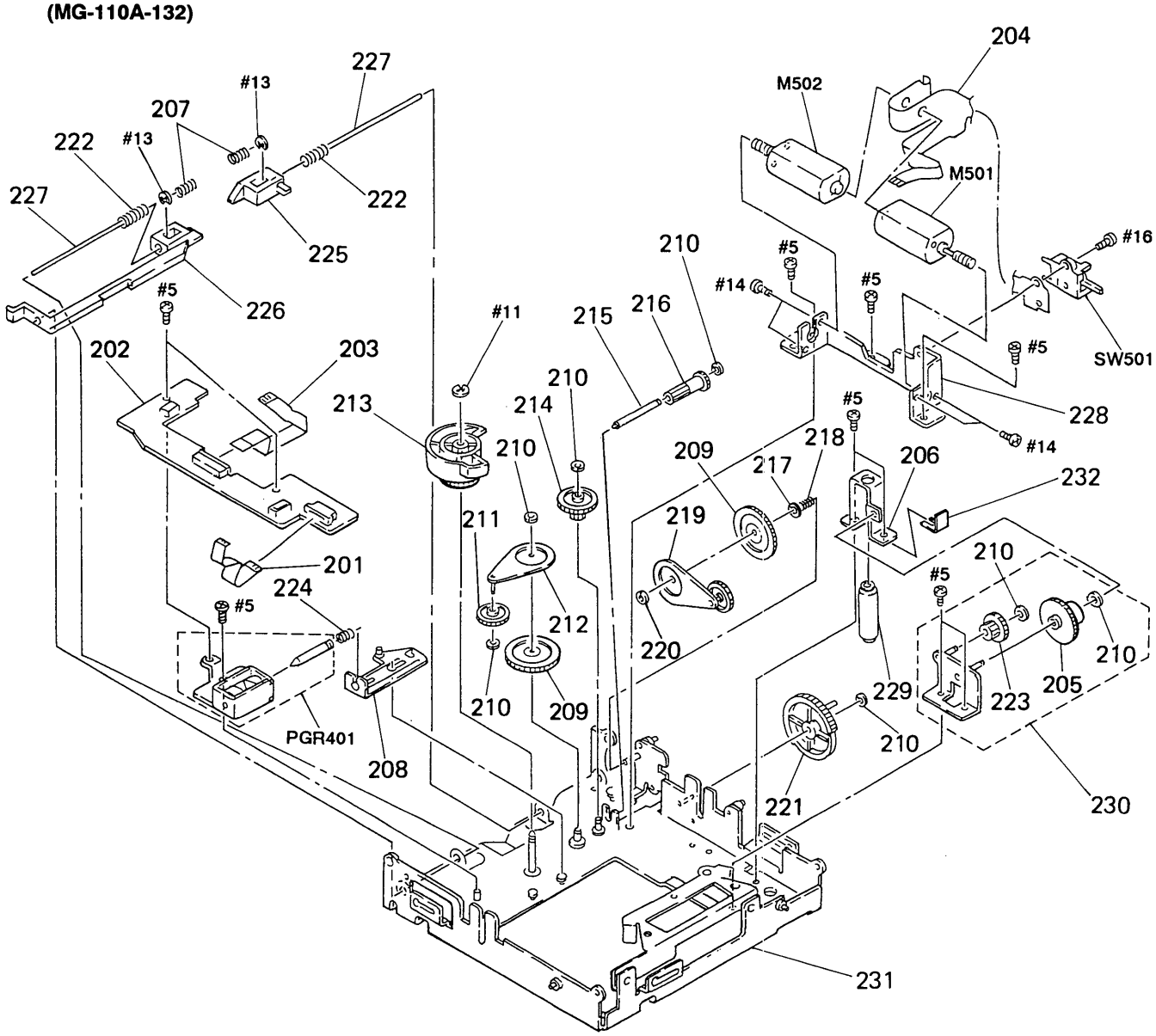
(4) MECHANISM DECK SECTION-3 (MG-110A-132)



Ref. No.	Part No.	Description	Remark
* 151	A-3309-039-A	SERVO BOARD, COMPLETE (52RF:US/Canadian)	
* 151	A-3309-046-A	SERVO BOARD, COMPLETE (52, 52RF:AEP/UK/E/TW/G)	
152	3-924-929-01	SHEET (EV. CD), INSULATING (52RF:US/Canadian)	
* 152	3-924-929-11	SHEET (EV. CD), INSULATING (52, 52RF:AEP/UK/E/TW/G)	
* 153	3-930-565-01	BRACKET (DPTT)	
* 154	1-650-649-11	DPT BOARD	
155	3-364-421-01	BEARING (ROLLER)	
156	3-323-231-11	ROLLER (LOWER)	
157	3-364-508-01	SPRING, COMPRESSION	
158	X-3371-634-1	ARM (NR)2 ASSY	
159	3-375-290-06	SPRING (DH)	
160	3-341-752-11	WASHER, POLYETHYLENE	
161	X-3368-226-2	ARM (DH) ASSY	
162	X-3366-788-2	ARM (DH2) ASSY	
163	3-364-504-11	ROLLER (RA)	
* 164	3-364-380-11	LEVER, SLIDE	
165	X-3362-345-1	GEAR ASSY, ROLLER	
166	3-377-720-01	WASHER, POLYETHYLENE	
167	3-364-506-01	ROLLER (SL)	
168	3-908-497-01	SPRING (GALVANIZED IRON)	
* 169	1-650-650-11	DRIVER BOARD	
170	3-915-913-01	PLATE (CD), CHUCK	
171	X-3367-910-1	BRACKET (CP)(51) ASSY	
172	3-371-504-01	SPRING, TENSION	
173	3-701-438-11	WASHER, 2.5	
174	3-380-963-11	SPACER	

SEE ADDITIONAL INFORMATION

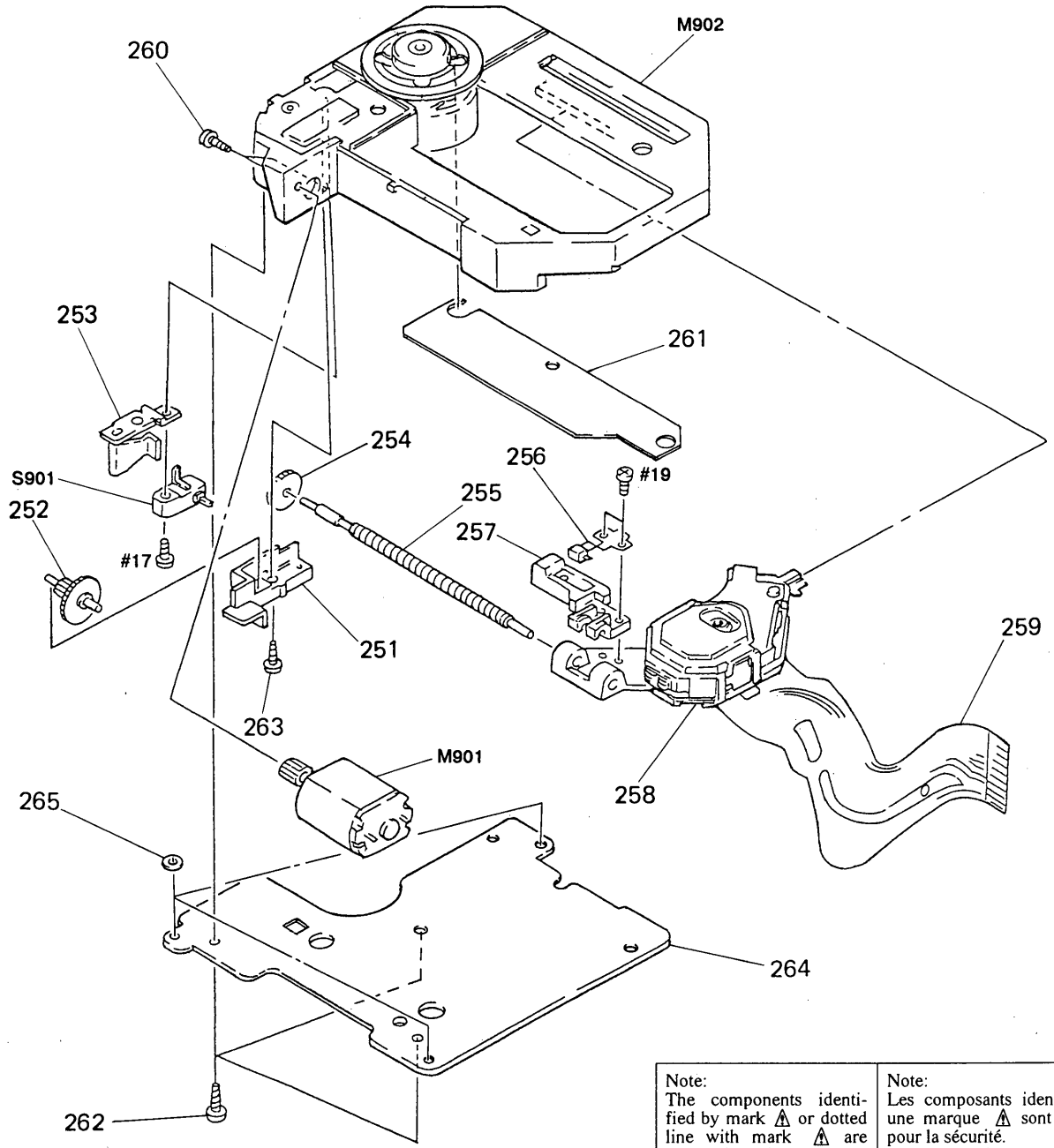
(5) MECHANISM DECK SECTION-4 (MG-110A-132)



Ref. No.	Part No.	Description	Remark
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
* 202	1-650-648-11	SENSOR BOARD	
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
204	1-659-817-11	MOTOR FLEXIBLE BOARD	
205	3-364-424-02	GEAR (EV)	
206	3-932-549-01	BRACKET (BEARING BK)	
207	3-485-239-00	SPRING, COMPRESSION	
208	X-3371-261-1	SLIDER (KRT) ASSY	
209	3-364-417-01	GEAR (L)	
210	3-377-719-01	WASHER, POLYETHYLENE	
211	3-364-422-01	GEAR (K)	
212	X-3371-258-1	LEVER (KRAT) ASSY	
213	3-364-419-01	GEAR (R), CAM	
214	3-364-505-01	WHEEL (C), WORM	
215	3-911-088-01	SHAFT (WWR2)	
216	3-911-089-01	WHEEL (R2), WORM	
217	3-930-298-01	WASHER	
218	3-388-479-01	SPRING, COMPRESSION	

Ref. No.	Part No.	Description	Remark
219	X-3371-259-1	GEAR (KWT) ASSY	
220	3-377-719-11	WASHER, POLYETHYLENE	
221	3-364-418-04	GEAR (SL)	
222	3-308-717-00	SPRING, COMPRESSION	
223	3-910-522-01	WHEEL (2), WORM	
224	3-353-804-01	SPRING, COMPRESSION	
225	3-911-102-01	LOCK (CLAW B)	
226	3-911-087-01	LOCK (CLAW)	
227	3-911-097-01	SHAFT (LOCK 2)	
228	3-930-568-01	BRACKET (EVMT)	
229	3-932-550-01	BEARING (BK)	
230	X-3371-268-1	BRACKET (EVT GEAR) ASSY	
* 231	X-3371-260-1	CHASSIS (EVT) ASSY	
232	3-336-274-11	SHIM	
M501	X-3367-983-1	MOTOR ASSY (ELEVATOR UP/DOWN)	
M502	X-3368-665-1	MOTOR (N) ASSY (DISC LOADING/SAVE)	
PGR401	1-454-580-21	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	

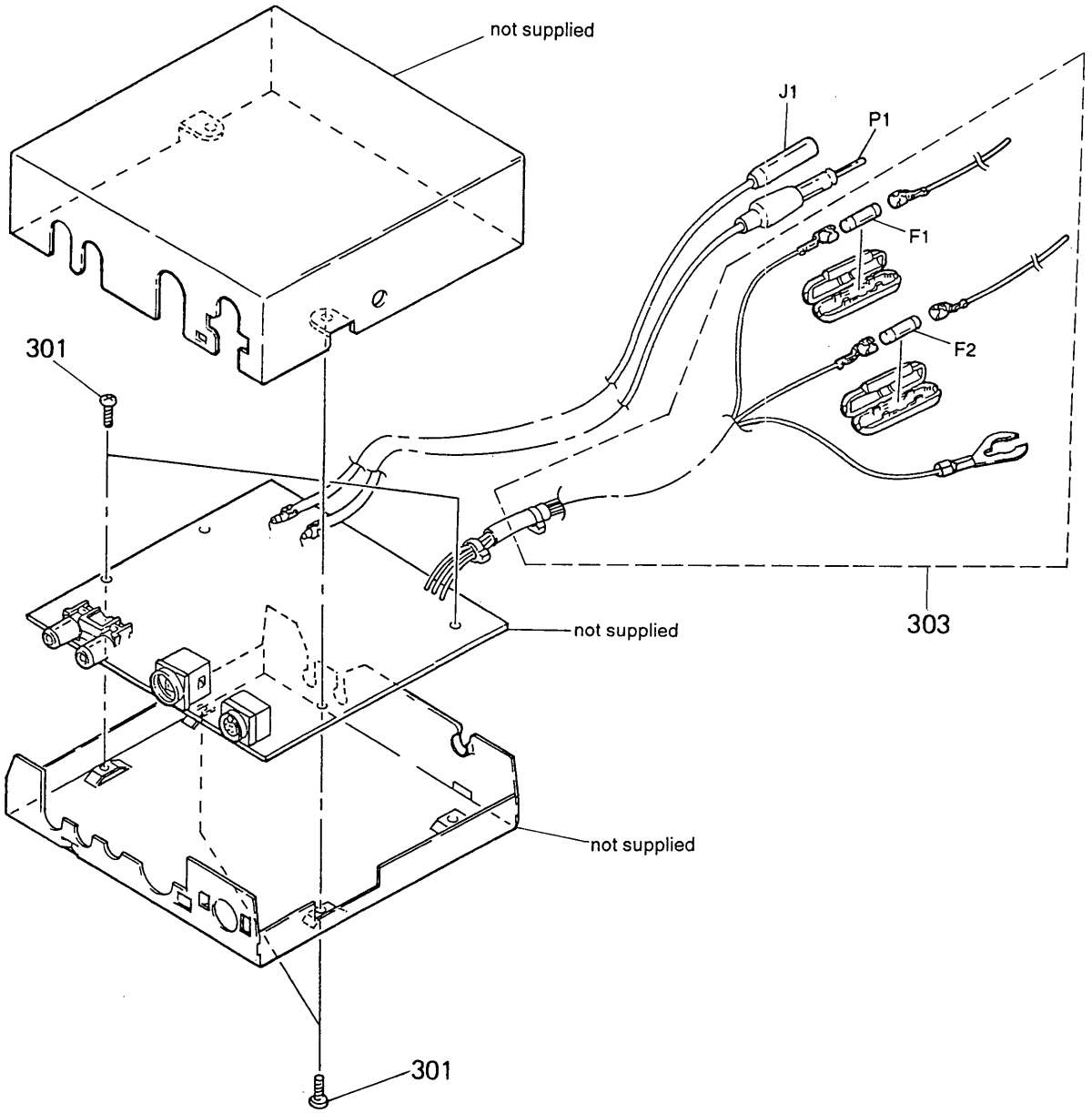
(6) OPTICAL PICK-UP SECTION
(MG-153CD-131) (CDX-52, 52RF: AEP, UK, E, TW, G)
(MG-152CD-131) (CDX-52RF: US, Canadian)



Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
251	3-908-097-01	HOLDER (GEAR)	
252	3-908-091-01	GEAR (MID)	
253	3-908-093-01	SPRING (THRUST RETAINER)	
254	3-908-092-01	GEAR (SLED)	
255	3-914-664-01	SHAFT (SLED 2)	
256	3-384-920-01	RETAINER (SL FEED)	
257	3-908-098-01	GEAR (SL FEED)	
⚠258	8-848-327-11	OPTICAL PICK-UP KSS-410A	
259	1-653-962-11	FLEXIBLE BOARD	
260	3-910-519-01	SCREW (SL)	
261	3-926-531-01	SHEET (OP, CD)	
262	3-912-536-11	SCREW (45-1)	
263	3-912-537-01	SCREW (45-2)	
* 264	3-908-094-02	BRACKET (OP)	
265	3-350-981-21	SHEET (HOLDER)	
M901	X-3367-782-1	MOTOR (GEAR) ASSY (SLED)	
M902	A-3291-586-A	MOTOR (SP) ASSY (SPINDLE)	(52, 52RF:AEP/UK/E/TW/G)
M902	A-3252-844-A	MOTOR (SP) ASSY (SPINDLE)	(52RF:US/Canadian)
S901	1-570-771-11	SWITCH (LIMIT)	

(7) HIDEAWAY UNIT SECTION (CDX-52RF)



Ref. No.	Part No.	Description	Remark
301	9-909-573-01	TUP SCREW	
303	9-906-860-01	POWER SUPPLY CABLE	
F1	1-532-419-00	FUSE (3A 25V)	
F2	1-532-360-XX	FUSE (1A)	
J1	9-905-317-01	ANT CABLE (J) (RF-IN)	
P1	9-905-316-01	ANT CABLE (J) (RF-OUT)	

SECTION 7
ELECTRICAL PARTS LIST

BUS **DPT** **DRIVER** **HIDEAWAY**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  G:German TW:Taiwan
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
*	1-655-451-11	BUS BOARD			
		*********			
		< CONNECTOR >			
CN801	1-580-907-21	PLUG, CONNECTOR(CONTROL)			
* CNJ801	1-770-589-11	HOUSING, CONNECTOR(PC BOARD)6P			
**********					
*	1-650-649-11	DPT BOARD			
		*********			
		< DIODE >			
D451	8-719-045-93	DIODE AN1102W-1-TR(DPT)			
**********					
*	1-650-650-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C501	1-126-204-11	ELECT CHIP	47uF	20% 16V	
C502	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C503	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C504	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
		< CONNECTOR >			
CNJ501	1-764-436-21	CONNECTOR, FPC 6P			
CNJ502	1-750-248-21	CONNECTOR, FPC 5P			
		< DIODE >			
D501	8-719-045-93	DIODE AN1102W-1-TR(DOE)			
		< IC >			
IC501	8-759-070-68	IC BA6247FP-Y			
		< CHIP CONDUCTOR >			
JR501	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR502	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR503	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR504	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR505	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR506	1-216-296-00	CONDUCTOR, CHIP		(3216)	
		< RESISTOR >			
R501	1-216-045-00	METAL CHIP	680	5% 1/10W	
R502	1-216-049-00	METAL GLAZE	1K	5% 1/10W	
R503	1-216-049-00	METAL GLAZE	1K	5% 1/10W	
R504	1-216-049-00	METAL GLAZE	1K	5% 1/10W	
**********					
		HIDEAWAY BOARD (CDX-52RF)			
		**********			
		< CAPACITOR >			
C101	1-102-074-00	CERAMIC	0.001uF	10% 50V	
C102	1-102-074-00	CERAMIC	0.001uF	10% 50V	
C103	1-126-301-11	ELECT	1uF	20% 50V	
C201	1-102-074-00	CERAMIC	0.001uF	10% 50V	
C202	1-102-074-00	CERAMIC	0.001uF	10% 50V	
C203	1-126-301-11	ELECT	1uF	20% 50V	
C301	1-126-157-11	ELECT	10uF	20% 16V	
C302	1-102-074-00	CERAMIC	0.001uF	10% 50V	
C303	1-102-508-11	CERAMIC	10PF	50V	
C306	1-102-978-00	CERAMIC	220PF	5% 50V	
C309	1-126-288-11	ELECT	4.7uF	20% 25V	
C311	1-124-464-11	ELECT	0.22uF	20% 50V	
C312	1-124-464-11	ELECT	0.22uF	20% 50V	
C313	1-102-973-00	CERAMIC	100PF	5% 50V	
C314	1-102-947-00	CERAMIC	10PF	50V	
C315	1-102-947-00	CERAMIC	10PF	50V	
C316	1-102-951-00	CERAMIC	15PF	5% 50V	
C317	1-102-949-00	CERAMIC	12PF	50V	
C319	1-102-945-00	CERAMIC	8PF	50V	
C320	1-102-129-00	CERAMIC	0.01uF	10% 50V	

HIDEAWAY

Ref. No.	Part No.	Description			Remark
C321	1-102-129-00	CERAMIC	0.01uF	10%	50V
C323	1-101-880-11	CERAMIC	47PF	5%	50V
C324	1-101-880-11	CERAMIC	47PF	5%	50V
C325	1-101-006-00	CERAMIC	0.047uF		50V
C326	1-126-157-11	ELECT	10uF	20%	16V
C327	1-101-006-00	CERAMIC	0.047uF		50V
C328	1-102-961-00	CERAMIC	27PF		50V
C329	1-102-961-00	CERAMIC	27PF		50V
C331	1-102-129-00	CERAMIC	0.01uF	10%	50V
C332	1-102-129-00	CERAMIC	0.01uF	10%	50V
C334	1-101-006-00	CERAMIC	0.047uF		50V
C335	1-123-296-11	ELECT	220uF	20%	6.3V
C402	1-126-768-11	ELECT	2200uF	20%	16V
C403	1-126-301-11	ELECT	1uF	20%	50V
C404	1-124-229-00	ELECT	33uF		10V
C405	1-125-559-11	ELECT	0.047F		5.5V
C406	1-101-006-00	CERAMIC	0.047uF		50V
C410	1-126-163-11	ELECT	4.7uF	20%	50V
C412	1-101-006-00	CERAMIC	0.047uF		50V
C501	1-126-301-11	ELECT	1uF	20%	50V
C503	1-102-973-00	CERAMIC	100PF	5%	50V
C504	1-102-973-00	CERAMIC	100PF	5%	50V
C505	1-102-973-00	CERAMIC	100PF	5%	50V
C506	1-102-973-00	CERAMIC	100PF	5%	50V
C507	1-102-973-00	CERAMIC	100PF	5%	50V
C509	1-102-973-00	CERAMIC	100PF	5%	50V
C601	1-102-973-00	CERAMIC	100PF	5%	50V
C602	1-102-973-00	CERAMIC	100PF	5%	50V
C603	1-102-973-00	CERAMIC	100PF	5%	50V
C604	1-101-006-00	CERAMIC	0.047uF		50V
C606	1-102-973-00	CERAMIC	100PF	5%	50V
C607	1-102-973-00	CERAMIC	100PF	5%	50V
C701	1-102-973-00	CERAMIC	100PF	5%	50V

< DIODE >

D301	8-719-901-33	DIODE	1SS133
D302	8-719-901-33	DIODE	1SS133
D303	9-905-312-01	DIODE	1SV110
D401	8-719-200-82	DIODE	11ES2
D402	8-719-933-39	DIODE	HZS6C1L
D403	8-719-901-33	DIODE	1SS133
D404	8-719-901-33	DIODE	1SS133
D405	8-719-901-33	DIODE	1SS133
D406	8-719-901-33	DIODE	1SS133
D407	8-719-933-49	DIODE	HZS7C1L
D501	8-719-001-51	DIODE	UZL-11H1
D601	8-719-933-43	DIODE	HZS7A1L
D604	8-719-901-33	DIODE	1SS133

Ref. No.	Part No.	Description	Remark

< FUSE >

F1	1-532-419-00	FUSE (3A 25V)	
F2	1-532-360-XX	FUSE (1A)	

< IC >

IC301	8-759-708-05	IC	NJM78L05A
IC302	9-909-571-01	IC	BA1405
IC303	8-759-803-37	IC	LM7001
IC401	8-759-165-82	IC	PST-600E
IC601	8-759-096-15	IC	MM1175XF
IC602	8-759-387-03	IC	uPD75516GF-616-3B9

< JACK/CONNECTOR >

J2	9-905-315-01	PIN JACK (2P) (SONY BUS IN:AUDIO L/R)
J3	1-580-907-11	PLUG, CONNECTOR (SONY BUS IN:CONTROL)
J4	1-563-486-11	SOCKET, CONNECTOR (COMMANDER/DISPLAY)

< COIL/TRANSFORMER/INDUCTOR >

L301	9-909-572-01	TRANSFORMER
L302		not supplied
L401	1-421-359-00	COIL, CHOKE
L402	1-410-513-11	MICRO INDUCTOR 22uH

< TRANSISTOR >

Q102	8-729-900-74	TRANSISTOR	DTC143TS
Q103	8-729-900-74	TRANSISTOR	DTC143TS
Q202	8-729-900-74	TRANSISTOR	DTC143TS
Q203	8-729-900-74	TRANSISTOR	DTC143TS
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q304	8-729-883-99	TRANSISTOR	2SC2839
Q305	8-729-883-99	TRANSISTOR	2SC2839
Q307	8-729-925-51	TRANSISTOR	DTC123ES
Q308	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q309	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q401	9-909-570-01	TRANSISTOR	2SC4721
Q402	8-729-900-89	TRANSISTOR	DTC144ES
Q403	8-729-900-63	TRANSISTOR	DTA124ES
Q404	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q501	8-729-900-89	TRANSISTOR	DTC144ES
Q502	8-729-900-63	TRANSISTOR	DTA124ES
Q503	9-909-895-01	TRANSISTOR	2SD1828
Q601	8-729-900-63	TRANSISTOR	DTA124ES
Q701	8-729-900-89	TRANSISTOR	DTC144ES
Q702	8-729-900-61	TRANSISTOR	DTC114ES

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-247-838-11	CARBON	2K	5%	1/4W
R102	1-247-847-11	CARBON	4.7K	5%	1/4W
R103	1-247-838-11	CARBON	2K	5%	1/4W
R104	1-249-416-11	CARBON	820	5%	1/4W
R105	1-249-431-11	CARBON	15K	5%	1/4W
R106	1-249-420-11	CARBON	1.8K	5%	1/4W
R107	1-247-856-00	CARBON	11K	5%	1/4W
R108	1-249-436-11	CARBON	39K	5%	1/4W
R201	1-247-838-11	CARBON	2K	5%	1/4W
R202	1-247-847-11	CARBON	4.7K	5%	1/4W
R203	1-247-838-11	CARBON	2K	5%	1/4W
R204	1-249-416-11	CARBON	820	5%	1/4W
R205	1-249-431-11	CARBON	15K	5%	1/4W
R206	1-247-835-11	CARBON	1.5K	5%	1/4W
R207	1-247-856-00	CARBON	11K	5%	1/4W
R208	1-249-436-11	CARBON	39K	5%	1/4W
R302	1-247-841-11	CARBON	2.7K	5%	1/4W
R303	1-249-409-11	CARBON	220	5%	1/4W
R304	1-249-413-11	CARBON	470	5%	1/4W
R305	1-247-879-11	CARBON	100K	5%	1/4W
R310	1-247-855-11	CARBON	10K	5%	1/4W
R311	1-247-855-11	CARBON	10K	5%	1/4W
R312	1-247-855-11	CARBON	10K	5%	1/4W
R313	1-249-430-11	CARBON	12K	5%	1/4W
R314	1-249-417-11	CARBON	1K	5%	1/4W
R315	1-247-855-11	CARBON	10K	5%	1/4W
R316	1-247-841-11	CARBON	2.7K	5%	1/4W
R317	1-249-413-11	CARBON	470	5%	1/4W
R318	1-247-879-11	CARBON	100K	5%	1/4W
R319	1-247-807-11	CARBON	100	5%	1/4W
R320	1-249-411-11	CARBON	330	5%	1/4W
R323	1-249-407-11	CARBON	150	5%	1/4W
R324	1-247-807-11	CARBON	100	5%	1/4W
R325	1-247-855-11	CARBON	10K	5%	1/4W
R326	1-249-416-11	CARBON	820	5%	1/4W
R327	1-247-863-11	CARBON	22K	5%	1/4W
R328	1-247-879-11	CARBON	100K	5%	1/4W
R401	1-247-855-11	CARBON	10K	5%	1/4W
R402	1-247-871-11	CARBON	47K	5%	1/4W
R406	1-247-839-11	CARBON	2.2K	5%	1/4W
R407	1-247-871-11	CARBON	47K	5%	1/4W
R408	1-247-871-11	CARBON	47K	5%	1/4W
R409	1-247-871-11	CARBON	47K	5%	1/4W
R410	1-247-871-11	CARBON	47K	5%	1/4W
R501	1-249-413-11	CARBON	470	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W
R505	1-249-417-11	CARBON	1K	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R601	1-247-807-11	CARBON	100	5%	1/4W
R602	1-247-807-11	CARBON	100	5%	1/4W
R603	1-247-855-11	CARBON	10K	5%	1/4W
R604	1-247-879-11	CARBON	100K	5%	1/4W
R605	1-247-871-11	CARBON	47K	5%	1/4W
R606	1-247-887-00	CARBON	220K	5%	1/4W
R607	1-247-887-00	CARBON	220K	5%	1/4W
R608	1-247-887-00	CARBON	220K	5%	1/4W
R609	1-247-879-11	CARBON	100K	5%	1/4W
R610	1-247-887-00	CARBON	220K	5%	1/4W
R611	1-247-855-11	CARBON	10K	5%	1/4W
R612	1-247-855-11	CARBON	10K	5%	1/4W
R703	1-247-855-11	CARBON	10K	5%	1/4W
		< RELAY >			
RL301	9-906-859-01	RELAY			
		< SWITCH >			
SW601	9-909-877-01	SLIDE SWITCH (POWER SELECT)			
SW602	9-905-345-01	SWITCH, TACTIL (RESET)			
		< VARIABLE RESISTOR >			
VR301	1-230-529-11	ADJ, METAL GRAZE 470K			
VR302	1-230-519-11	ADJ, METAL GRAZE 470			
		< VIBRATOR >			
X301	1-567-093-00	VIBRATOR, CRYSTAL (38KHz)			
X302	9-905-313-01	VIBRATOR, CRYSTAL (7.2MHz)			
X601	9-905-343-01	VIBRATOR, CERAMIC (4.19MHz)			
**********					
*	1-655-450-11	JACK BOARD			
		**********			
		< CAPACITOR >			
C701	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C702	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
		< CONNECTOR/JACK >			
CN701	1-580-441-11	JACK, PIN 2P(AUDIO OUT L/R)			
CNJ701	1-573-549-11	SOCKET, CONNECTOR 11P			
* CNP701	1-770-588-11	PIN, CONNECTOR (PC BOARD) 6P			

JACK **MD**

Ref. No.	Part No.	Description			Remark
		< CHIP CONDUCTOR >			
FB701	1-216-296-00	CONDUCTOR, CHIP	(3216)		
		< IC LINK >			
IC701	1-532-686-21	LINK, IC			
		< CHIP CONDUCTOR >			
JR701	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR702	1-216-296-00	CONDUCTOR, CHIP	(3216)		
**********					
*	A-3298-465-A	MD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C703	1-162-306-11	CERAMIC	0.01uF	30%	16V
C901	1-124-589-11	ELECT	47uF	20%	16V
C902	1-124-589-11	ELECT	47uF	20%	16V
C903	1-124-589-11	ELECT	47uF	20%	16V
C904	1-126-942-61	ELECT	1000uF	20%	16V
C905	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C906	1-124-589-11	ELECT	47uF	20%	16V
C907	1-124-589-11	ELECT	47uF	20%	16V
C908	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C909	1-124-589-11	ELECT	47uF	20%	16V
C910	1-125-701-11	CAPACITOR	0.047F		
C911	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C912	1-126-301-11	ELECT	1uF	20%	50V
C913	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C916	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C917	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C951	1-124-589-11	ELECT	47uF	20%	16V
C952	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C953	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C981	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C982	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C983	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CNJ901	1-764-391-11	CONNECTOR, FFC/FPC (ZIF) 26P			
CNJ902	1-573-549-11	SOCKET, CONNECTOR 11P			
* CNP981	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D901	8-719-210-33	DIODE	EC10DS2		
D902	8-719-210-33	DIODE	EC10DS2		
D903	8-719-801-78	DIODE	1SS184		
D904	8-719-401-63	DIODE	MA3062M-TX		
D905	8-719-400-53	DIODE	MA3062-L		
D906	8-719-038-48	DIODE	1SS319(TE85R)		
D907	8-719-801-78	DIODE	1SS184		
D981	8-719-401-63	DIODE	MA3062M-TX		
D982	8-719-975-40	DIODE	RB411D		
D983	8-719-401-63	DIODE	MA3062M-TX		
D984	8-719-975-40	DIODE	RB411D		
D986	8-719-975-40	DIODE	RB411D		
		< FERRITE BEAD >			
FB901	1-500-121-21	BEAD, FERRITE (CHIP)			
FB902	1-500-121-21	BEAD, FERRITE (CHIP)			
		< IC >			
IC901	8-759-231-53	IC	TA7805S		
IC902	8-759-054-12	IC	PQ09RA1		
IC903	8-759-097-36	IC	RH5VA40AA		
IC951	8-759-040-83	IC	BA6287F		
IC981	8-759-284-87	IC	MM1284XFFE		
		< CHIP CONDUCTOR >			
JR901	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR902	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR903	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR904	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR905	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR906	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR907	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR908	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR909	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR910	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR911	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR912	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR913	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR914	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR915	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR916	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR917	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR918	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR919	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR920	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR922	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR923	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR924	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR925	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR926	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR927	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR928	1-216-296-00	CONDUCTOR, CHIP	(3216)		

SEE ADDITIONAL INFORMATION

MD SENSOR SERVO

Ref. No.	Part No.	Description			Remark
JR929	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR930	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR931	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR932	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR933	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR934	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR935	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR936	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR937	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR938	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR939	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR940	1-216-296-00	CONDUCTOR, CHIP	(3216)		
		< TRANSISTOR >			
Q901	8-729-016-83	TRANSISTOR	2SB1446		
Q902	8-729-027-52	TRANSISTOR	DTC124EKA-T146		
Q903	8-729-822-05	TRANSISTOR	2SD1622-ST-TD		
Q904	8-729-027-31	TRANSISTOR	DTA124EKA-T146		
Q905	8-729-230-49	TRANSISTOR	2SC2712-YG		
		< RESISTOR >			
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R903	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R904	1-216-077-00	METAL CHIP	15K	5%	1/10W
R905	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R906	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R907	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R908	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R909	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R910	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R953	1-218-279-11	METAL GLAZE	12	5%	1/2W
R954	1-218-279-11	METAL GLAZE	12	5%	1/2W
R955	1-218-279-11	METAL GLAZE	12	5%	1/2W
R981	1-216-089-00	METAL GLAZE	47K	5%	1/10W
		< SWITCH >			
SW901	1-571-958-11	SWITCH, PUSH (1 KEY) (PST)			
SW902	1-692-864-21	SWITCH, PUSH (1 KEY) (LOCK)			
SW904	1-571-958-11	SWITCH, PUSH (1 KEY) (LOT)			
SW951	1-571-532-21	SWITCH, TACTIL (⏏)			
**********					
*	1-650-648-11	SENSOR BOARD			
		**********			
		< CONNECTOR >			
CNJ401	1-764-437-21	CONNECTOR, FPC 11P			
CNJ402	1-764-436-21	CONNECTOR, FPC 6P			
CNP401	1-580-055-21	PIN, CONNECTOR 2P			
* CNP402	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
		< DIODE >			
D401	8-719-801-78	DIODE	1SS184		
		< CHIP CONDUCTOR >			
JR401	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR402	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR403	1-216-296-00	CONDUCTOR, CHIP	(3216)		
JR404	1-216-296-00	CONDUCTOR, CHIP	(3216)		
		< TRANSISTOR >			
Q401	8-729-804-41	TRANSISTOR	2SB1122-S		
Q402	8-729-027-52	TRANSISTOR	DTC124EKA-T146		
Q403	8-729-024-26	PHOTO TRANSISTOR	CPT-181S-C-TU (DPT)		
Q404	8-729-024-26	PHOTO TRANSISTOR	CPT-181S-C-TU (DOE)		
		< RESISTOR >			
R401	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R402	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R403	1-216-194-00	METAL CHIP	680	5%	1/8W
		< SWITCH >			
SW401	1-571-754-31	SWITCH, PUSH (1 KEY) (CES)			
**********					
*	A-3309-039-A	SERVO BOARD, COMPLETE (52RF:US/Canadian)			
		**********			
		< CAPACITOR >			
C11	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C12	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C13	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C14	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C15	1-135-227-11	TANTAL. CHIP	100uF	20%	6.3V
C18	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C19	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C20	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C21	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C22	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C23	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C24	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C25	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C26	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C27	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C28	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C29	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C30	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C31	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V

SERVO

SEE ADDITIONAL INFORMATION

Ref. No.	Part No.	Description			Remark
C32	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C34	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C35	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C36	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C37	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C38	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C39	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C40	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C41	1-164-672-11	CERAMIC CHIP	1500PF	5%	16V
C42	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C43	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C44	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C45	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C51	1-110-454-11	SOLID CHIP	10uF	20%	16V
C52	1-110-454-11	SOLID CHIP	10uF	20%	16V
C53	1-110-454-11	SOLID CHIP	10uF	20%	16V
C54	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C55	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C56	1-110-475-11	SOLID CHIP	15uF	20%	6.3V
C57	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C58	1-110-475-11	SOLID CHIP	15uF	20%	6.3V
C59	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C62	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C63	1-110-454-11	SOLID CHIP	10uF	20%	16V
C64	1-110-454-11	SOLID CHIP	10uF	20%	16V
C65	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C66	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C101	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C102	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C103	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C104	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C105	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C201	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C202	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C203	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C204	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C205	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNJ11	1-764-438-21	CONNECTOR, FPC 17P			
CNJ12	1-770-351-11	CONNECTOR, FPC 26P			
CNJ13	1-764-439-21	CONNECTOR, FPC 11P			
CNP11	1-580-057-11	PIN, CONNECTOR 4P			
CNP12	1-580-055-21	PIN, CONNECTOR 2P			

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D11	8-719-914-43	DIODE DAN202K			
		< IC >			
IC11	8-752-061-08	IC CXA1571N-T4			
IC12	8-752-361-94	IC CXD2515Q			
IC13	8-759-071-79	IC BA6297AFP			
IC14	8-752-860-89	IC CXP84120-021Q			
IC16	8-759-196-56	IC SM5874AM			
IC17	8-759-252-90	IC TLV2362IPW-ELM1500			
		< CHIP CONDUCTOR >			
JC12	1-216-296-00	CONDUCTOR, CHIP			(3216)
		< JUMPER RESISTOR >			
JR1	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COIL >			
L11	1-410-999-11	INDUCTOR CHIP	3.3uH		
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR	2SB624-BV345		
Q13	8-729-027-31	TRANSISTOR	DTA124EKA-T146		
Q14	8-729-027-31	TRANSISTOR	DTA124EKA-T146		
Q15	8-729-027-31	TRANSISTOR	DTA124EKA-T146		
Q16	8-729-027-31	TRANSISTOR	DTA124EKA-T146		
Q17	8-729-027-52	TRANSISTOR	DTC124EKA-T146		
Q21	8-729-807-34	TRANSISTOR	2SB1123-S		
Q22	8-729-027-52	TRANSISTOR	DTC124EKA-T146		
Q23	8-729-027-52	TRANSISTOR	DTC124EKA-T146		
Q24	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q25	8-729-015-39	TRANSISTOR	DTC323TK		
Q26	8-729-015-39	TRANSISTOR	DTC323TK		
		< RESISTOR >			
R11	1-216-839-11	METAL CHIP	33K	5%	1/16W
R12	1-216-839-11	METAL CHIP	33K	5%	1/16W
R13	1-216-847-11	METAL CHIP	150K	5%	1/16W
R14	1-216-024-00	METAL GLAZE	91	5%	1/10W
R15	1-216-847-11	METAL CHIP	150K	5%	1/16W
R16	1-216-857-11	METAL CHIP	1M	5%	1/16W
R17	1-216-857-11	METAL CHIP	1M	5%	1/16W
R18	1-216-073-00	METAL CHIP	10K	5%	1/10W
R19	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R20	1-216-073-00	METAL CHIP	10K	5%	1/10W
R21	1-216-836-11	METAL CHIP	18K	5%	1/16W

SEE ADDITIONAL INFORMATION

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Ref. No.	Part No.	Description			Remark
R22	1-216-833-11	METAL CHIP	10K	5%	1/16W
R23	1-216-813-11	METAL CHIP	220	5%	1/16W
R24	1-216-837-11	METAL CHIP	22K	5%	1/16W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R26	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R27	1-216-073-00	METAL CHIP	10K	5%	1/10W
R28	1-216-073-00	METAL CHIP	10K	5%	1/10W
R29	1-216-033-00	METAL CHIP	220	5%	1/10W
R30	1-216-033-00	METAL CHIP	220	5%	1/10W
R31	1-216-833-11	METAL CHIP	10K	5%	1/16W
R32	1-216-839-11	METAL CHIP	33K	5%	1/16W
R33	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R34	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R35	1-216-833-11	METAL CHIP	10K	5%	1/16W
R36	1-216-857-11	METAL CHIP	1M	5%	1/16W
R37	1-216-845-11	METAL CHIP	100K	5%	1/16W
R38	1-216-833-11	METAL CHIP	10K	5%	1/16W
R40	1-216-994-11	METAL GLAZE	13K	5%	1/16W
R41	1-216-839-11	METAL CHIP	33K	5%	1/16W
R42	1-216-837-11	METAL CHIP	22K	5%	1/16W
R43	1-216-843-11	METAL CHIP	68K	5%	1/16W
R44	1-216-843-11	METAL CHIP	68K	5%	1/16W
R45	1-216-843-11	METAL CHIP	68K	5%	1/16W
R46	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R47	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R48	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R49	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R50	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R51	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R52	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R53	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R54	1-216-833-11	METAL CHIP	10K	5%	1/16W
R55	1-216-833-11	METAL CHIP	10K	5%	1/16W
R56	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R57	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R58	1-216-841-11	METAL CHIP	47K	5%	1/16W
R59	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R60	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R69	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R72	1-216-150-00	METAL GLAZE	10	5%	1/8W
R73	1-216-150-00	METAL GLAZE	10	5%	1/8W
R75	1-216-081-00	METAL CHIP	22K	5%	1/10W
R76	1-216-081-00	METAL CHIP	22K	5%	1/10W
R77	1-216-081-00	METAL CHIP	22K	5%	1/10W
R78	1-216-081-00	METAL CHIP	22K	5%	1/10W
R81	1-216-081-00	METAL CHIP	22K	5%	1/10W
R82	1-216-081-00	METAL CHIP	22K	5%	1/10W
R83	1-216-815-11	METAL CHIP	330	5%	1/16W
R84	1-216-815-11	METAL CHIP	330	5%	1/16W
R85	1-216-815-11	METAL CHIP	330	5%	1/16W
R86	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R87	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R88	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R89	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R90	1-216-073-00	METAL CHIP	10K	5%	1/10W
R91	1-216-041-00	METAL CHIP	470	5%	1/10W
R92	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R93	1-216-158-00	METAL GLAZE	22	5%	1/8W
R95	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R96	1-216-841-11	METAL CHIP	47K	5%	1/16W
R97	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R98	1-216-150-00	METAL GLAZE	10	5%	1/8W
R99	1-216-150-00	METAL GLAZE	10	5%	1/8W
R101	1-216-833-11	METAL CHIP	10K	5%	1/16W
R102	1-216-833-11	METAL CHIP	10K	5%	1/16W
R103	1-216-833-11	METAL CHIP	10K	5%	1/16W
R104	1-216-833-11	METAL CHIP	10K	5%	1/16W
R105	1-216-845-11	METAL CHIP	100K	5%	1/16W
R106	1-216-845-11	METAL CHIP	100K	5%	1/16W
R107	1-216-845-11	METAL CHIP	100K	5%	1/16W
R108	1-216-845-11	METAL CHIP	100K	5%	1/16W
R109	1-216-833-11	METAL CHIP	10K	5%	1/16W
R110	1-216-809-11	METAL CHIP	100	5%	1/16W
R111	1-216-845-11	METAL CHIP	100K	5%	1/16W
R201	1-216-833-11	METAL CHIP	10K	5%	1/16W
R202	1-216-833-11	METAL CHIP	10K	5%	1/16W
R203	1-216-833-11	METAL CHIP	10K	5%	1/16W
R204	1-216-833-11	METAL CHIP	10K	5%	1/16W
R205	1-216-845-11	METAL CHIP	100K	5%	1/16W
R206	1-216-845-11	METAL CHIP	100K	5%	1/16W
R207	1-216-845-11	METAL CHIP	100K	5%	1/16W
R208	1-216-845-11	METAL CHIP	100K	5%	1/16W
R209	1-216-833-11	METAL CHIP	10K	5%	1/16W
R210	1-216-809-11	METAL CHIP	100	5%	1/16W
R211	1-216-845-11	METAL CHIP	100K	5%	1/16W
R302	1-216-295-00	CONDUCTOR, CHIP			(2012)
R303	1-216-864-11	METAL CHIP	0	5%	1/16W
R304	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R306	1-216-851-11	METAL CHIP	330K	5%	1/16W
R307	1-216-851-11	METAL CHIP	330K	5%	1/16W

< VARIABLE RESISTOR >

RV11	1-238-091-11	RES, ADJ, CERMET	22K
RV12	1-238-091-11	RES, ADJ, CERMET	22K

< THERMISTOR >

TH11	1-810-510-21	THERMISTOR NTH5G35A472K01TE

SERVO

SEE ADDITIONAL INFORMATION

Ref. No.	Part No.	Description		Remark
		< VIBRATOR >		
X11	1-760-479-11	VIBRATOR, CERAMIC (8.0MHz)		
X12	1-760-241-11	VIBRATOR, CERAMIC (16.934MHz)		
**********				
	A-3309-046-A	SERVO BOARD, COMPLETE		
		**********		
		(52, 52RF:AEP/UK/E/TW/G)		
		< CAPACITOR >		
C11	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C12	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C13	1-162-969-11	CERAMIC CHIP	0.0068uF 10%	25V
C14	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C15	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C16	1-110-450-11	SOLID CHIP	100uF 20%	6.3V
C17	1-110-569-11	TANTAL. CHIP	47uF 20%	6.3V
C18	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C19	1-164-245-11	CERAMIC CHIP	0.015uF 10%	25V
C21	1-165-176-11	CERAMIC CHIP	0.047uF 10%	16V
C22	1-164-227-11	CERAMIC CHIP	0.022uF 10%	25V
C25	1-162-963-11	CERAMIC CHIP	680PF 10%	50V
C27	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C28	1-110-569-11	TANTAL. CHIP	47uF 20%	6.3V
C29	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C30	1-162-966-11	CERAMIC CHIP	0.0022uF 10%	50V
C31	1-107-823-11	CERAMIC CHIP	0.47uF 10%	16V
C32	1-110-569-11	TANTAL. CHIP	47uF 20%	6.3V
C33	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C34	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C35	1-162-970-11	CERAMIC CHIP	0.01uF 10%	25V
C36	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C37	1-135-181-21	TANTALUM CHIP	4.7uF 20%	6.3V
C38	1-164-677-11	CERAMIC CHIP	0.033uF 10%	16V
C39	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C40	1-162-970-11	CERAMIC CHIP	0.01uF 10%	25V
C41	1-164-677-11	CERAMIC CHIP	0.033uF 10%	16V
C42	1-162-916-11	CERAMIC CHIP	12PF 5%	50V
C43	1-162-970-11	CERAMIC CHIP	0.01uF 10%	25V
C46	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C47	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C48	1-110-454-11	SOLID CHIP	10uF 20%	16V
C49	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C50	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C51	1-162-927-11	CERAMIC CHIP	100PF 5%	50V
C52	1-162-965-11	CERAMIC CHIP	0.0015uF 10%	50V
C53	1-164-361-11	CERAMIC CHIP	0.047uF	16V
C54	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V
C55	1-162-967-11	CERAMIC CHIP	0.0033uF 10%	50V
C56	1-162-970-11	CERAMIC CHIP	0.01uF 10%	25V
C59	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C61	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C62	1-110-449-11	SOLID CHIP	47uF 20%	6.3V
C63	1-110-449-11	SOLID CHIP	47uF 20%	6.3V
C64	1-110-449-11	SOLID CHIP	47uF 20%	6.3V
C65	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C66	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C67	1-110-454-11	SOLID CHIP	10uF 20%	16V
C68	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C69	1-110-449-11	SOLID CHIP	47uF 20%	6.3V
C70	1-110-454-11	SOLID CHIP	10uF 20%	16V
C71	1-110-454-11	SOLID CHIP	10uF 20%	16V
C72	1-110-452-11	SOLID CHIP	47uF 20%	10V
C73	1-110-569-11	TANTAL. CHIP	47uF 20%	6.3V
C74	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C75	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C100	1-163-038-00	CERAMIC CHIP	0.1uF	25V
		< CONNECTOR >		
CNJ11	1-764-438-21	CONNECTOR, FPC 17P		
CNJ12	1-770-351-11	CONNECTOR, FPC 26P		
CNJ13	1-764-439-21	CONNECTOR, FPC 11P		
CNP11	1-580-057-11	PIN, CONNECTOR 4P		
CNP12	1-580-055-21	PIN, CONNECTOR 2P		
		< DIODE >		
D11	8-719-801-78	DIODE 1SS184		
		< FERRITE BEAD >		
FB101	1-550-907-21	BEAD, FERRITE (CHIP)		
FB102	1-550-907-21	BEAD, FERRITE (CHIP)		
FB103	1-550-907-21	BEAD, FERRITE (CHIP)		
		< IC >		
IC11	8-752-069-56	IC CXA1782BQ		
IC12	8-752-372-94	IC CXD2507AQ		
IC13	8-759-071-79	IC BA6297AFP		
IC14	8-752-871-28	IC CXP84120-039Q		
IC16	8-759-327-78	IC TC9404FN-EL		
		< COIL >		
L11	1-412-985-31	INDUCTOR 3.3uH		
		< TRANSISTOR >		
Q11	8-729-027-31	TRANSISTOR DTA124EKA-T146		
Q14	8-729-141-48	TRANSISTOR 2SB624-BV345		
Q16	8-729-027-52	TRANSISTOR DTC124EKA-T146		

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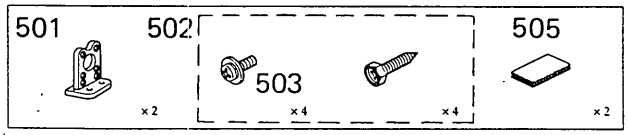
Ref. No.	Part No.	Description				Remark
Q17	8-729-027-23	TRANSISTOR	DTA114EKA-T146			
Q19	8-729-015-39	TRANSISTOR	DTC323TK			
Q20	8-729-015-39	TRANSISTOR	DTC323TK			
Q22	8-729-027-31	TRANSISTOR	DTA124EKA-T146			
Q23	8-729-027-31	TRANSISTOR	DTA124EKA-T146			
		< RESISTOR >				
R11	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R12	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R13	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R14	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R15	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R16	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R17	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R18	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R19	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R20	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R21	1-216-809-11	METAL CHIP	100	5%	1/16W	
R22	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R23	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R24	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R25	1-216-045-00	METAL CHIP	680	5%	1/10W	
R26	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R27	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R28	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R29	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R30	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R31	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R32	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R33	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R34	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R35	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R36	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R37	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R39	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R41	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R42	1-216-846-11	METAL CHIP	120K	5%	1/16W	
R43	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R44	1-216-994-11	METAL GLAZE	13K	5%	1/16W	
R45	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R47	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R48	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R49	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R50	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R51	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R52	1-216-864-11	METAL CHIP	0	5%	1/16W	
R53	1-216-158-00	METAL GLAZE	22	5%	1/8W	
R54	1-216-837-11	METAL CHIP	22K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R55	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R56	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R57	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R58	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R59	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R60	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R61	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R62	1-216-864-11	METAL CHIP	0	5%	1/16W	
R63	1-218-273-11	METAL GLAZE	510K	5%	1/16W	
R65	1-216-846-11	METAL CHIP	120K	5%	1/16W	
R68	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R69	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R72	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R73	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R74	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R75	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R76	1-216-856-11	METAL CHIP	820K	5%	1/16W	
R77	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R78	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R79	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R80	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R81	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R82	1-216-814-11	METAL CHIP	270	5%	1/16W	
R83	1-216-814-11	METAL CHIP	270	5%	1/16W	
R84	1-216-814-11	METAL CHIP	270	5%	1/16W	
R88	1-216-809-11	METAL CHIP	100	5%	1/16W	
R89	1-216-809-11	METAL CHIP	100	5%	1/16W	
R90	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R91	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R92	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R93	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R94	1-216-295-00	CONDUCTOR, CHIP			(2012)	
R98	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R100	1-216-864-11	METAL CHIP	0	5%	1/16W	
R103	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R104	1-216-813-11	METAL CHIP	220	5%	1/16W	
R105	1-216-809-11	METAL CHIP	100	5%	1/16W	
R112	1-216-864-11	METAL CHIP	0	5%	1/16W	
		< VARIABLE RESISTOR >				
RV11	1-238-091-11	RES, ADJ, CERMET	22K			
RV12	1-238-094-11	RES, ADJ, CERMET	220K			
RV13	1-238-091-11	RES, ADJ, CERMET	22K			
RV14	1-238-091-11	RES, ADJ, CERMET	22K			
		< VIBRATOR >				
X11	1-760-479-11	VIBRATOR, CERAMIC (8.0MHz)				
X12	1-760-241-11	VIBRATOR, CERAMIC (16.934MHz)				

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
103	1-642-838-11	JACK FLEXIBLE BOARD	
123	1-655-867-11	MD FLEXIBLE BOARD	
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
204	1-659-817-11	MOTOR FLEXIBLE BOARD	
⚠258	8-848-327-11	OPTICAL PICK-UP KSS-410A	
259	1-653-962-11	FLEXIBLE BOARD	
303	9-906-860-01	POWER SUPPLY CABLE	
F1	1-532-419-00	FUSE (3A 25V)	
F2	1-532-360-XX	FUSE (1A)	
J1	9-905-317-01	ANT CABLE (J) (RF-IN)	
M501	X-3367-983-1	MOTOR ASSY (ELEVATOR UP/DOWN)	
M502	X-3368-665-1	MOTOR (N) ASSY (DISC LOADING/SAVE)	
M601	X-3367-983-1	MOTOR ASSY (EJECT)	
M901	X-3367-782-1	MOTOR (GEAR) ASSY (SLED)	
M902	A-3291-586-A	MOTOR (SP) ASSY (SPINDLE)	
P1	9-905-316-01	ANT CABLE (J) (RF-OUT)	
PGR401	1-454-580-21	SOLENOID, PLUNGER	
S901	1-570-771-11	SWITCH (LIMIT)	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	
**********			
		**********	
		HARDWER LIST	
		**********	
#1	7-621-255-35	SCREW +BVTT 2X5 (S)	
#2	7-621-255-40	SCREW +BVTT 2X6 (S)	
#3	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#4	7-621-773-95	SCREW +PTT 2.6X6 (S)	
#5	7-685-781-09	SCREW +PTT 2X4 (S)	
#6	7-685-782-01	SCREW +PTT 2X5 (S)	
#8	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#9	7-685-104-19	+P 2X6 TYPE2 NON-SLIT	
#11	7-624-104-04	STOPRING 2.0, TEPE-E	
#12	7-627-554-37	SCREW, PRECISION +P 2X1.8 TYPE1	
#13	7-624-102-04	STOP RING 1.5, TYPE-E	
#14	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#16	7-621-259-25	SCREW +P 2.6X4	
#17	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT	
#19	7-627-852-17	+P 1.7X4	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-612-21	REMOTE COMMANDER (RM-X57) (52RF)	
	1-590-519-21	CORD WITH CONNECTOR (BUS CABLE)	
	1-690-743-11	CORD, CONNECTION (RCA PIN CORD) (52, 52RF:AEP/UK/E/TW/G)	
	1-775-419-11	CORD, CONNECTION (RCA PIN CORD) (52, 52RF:US/Canadian)	
	3-759-756-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH) (52:AEP/UK/G)	
	3-759-756-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (52:US/Canadian/E/TW)	
	3-759-756-41	MANUAL, INSTRUCTION (SPANISH, SWEDISH, PORTUGUESE, DANISH, FINNISH) (52:AEP/UK)	
	3-856-013-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN) (52RF:AEP/UK/G)	
	3-856-013-21	MANUAL, INSTRUCTION (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (52RF:AEP/UK)	
	3-856-013-31	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (52RF:E)	
	3-856-013-41	MANUAL, INSTRUCTION (DANISH, FINNISH) (52RF:AEP/UK)	
	3-856-013-51	MANUAL, INSTRUCTION (ENGLISH) (52RF:US/Canadian)	
	3-856-013-61	MANUAL, INSTRUCTION (FRENCH) (52RF:Canadian)	
	3-856-014-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN) (52RF:AEP/UK/G)	
	3-856-014-21	MANUAL, INSTRUCTION, INSTALL (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (52RF:AEP/UK)	
	3-856-014-31	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE) (52RF:E)	
	3-856-014-41	MANUAL, INSTRUCTION, INSTALL (DANISH, FINNISH) (52RF:AEP/UK)	
	3-856-014-51	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (52RF:US/Canadian)	
	4-875-574-00	SHEET, PROTECTION	
	9-939-196-01	BT HOLDER (52RF)	
	X-3368-306-2	MAGAZINE (450) ASSY	
**********			
		**********	
		MAUNTIG HARDWARE	
		**********	
* 501	3-375-508-11	BRACKET (300)	
* 502	X-3364-512-1	SCREW ASSY (52RF)	
* 502	X-3369-824-1	SCREW ASSY (52)	
503	7-682-662-09	SCREW +PSW 4X10	
* 505	4-916-258-01	TAPE, MAGIC (52RF)	



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

English
96A0585-1
Printed in Japan
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Sony Corporation
Mobile Electronics Company
Published by Home A&V Products Div.
Quality Engineering Dept.

CDX-52/52RF

SONY
SERVICE MANUAL

US Model
Canadian Model
E Model
CDX-52/52RF
AEP Model
UK Model
CDX-52RF

SUPPLEMENT-1

File this supplement with the service manual.

Subject:
1. **Mechanism Deck Modification**
2. **Block Diagram**
3. **Display Section Printed Wiring Board**
4. **Display Section Schematic Diagram**
5. **Exploded View (Display Section)**
6. **Electrical Parts List (Display Section)**

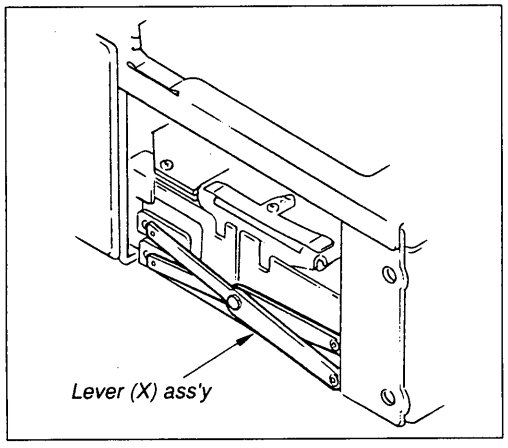
(ENG-96009)

1. MECHANISM DECK MODIFICATION

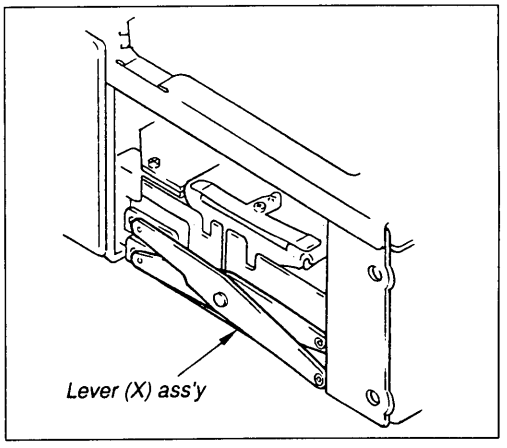
The mechanism deck was changed from MG-110A-132 to MG-110B-132.
This supplement contains only a new type mechanism deck.
No circuit is changed, and therefore for electrical parts, please refer to the CDX-52/52RF service manual (9-923-459-11) previously issued.

- **Mechanism Deck Type Discrimination**

MG-110A-132 (Former Type)



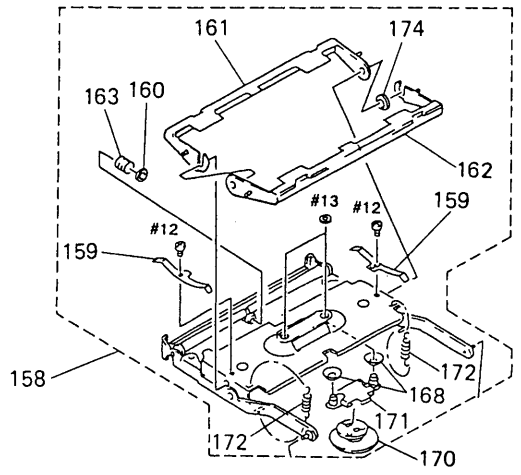
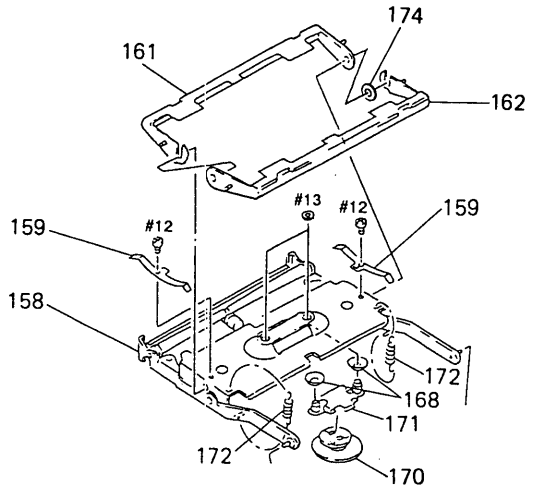
MG-110B-132 (New Type)



• Changed Parts List

<table>
<tr><th>Page</th><th>MG-110A-132</th><th>MG-110B-132</th></tr>
<tr><td>47</td><td>Ref.No. Part No. Description

63 X-3371-348-1 LEVER (X) ASSY
64 3-568-814-00 SPRING, TENSION</td><td>Part No. Description

X-3371-384-1 LEVER (X) ASSY
3-927-978-01 SPRING, TENSION</td></tr>
<tr><td rowspan="2">49</td><td> 
</td><td> 
</td></tr>
<tr><td>Ref.No. Part No. Description

* 154 1-650-649-11 DPT BOARD
158 X-3371-634-1 ARM (NR) 2 ASSY
159 3-375-290-06 SPRING (DH)
160 3-341-752-11 WASHER, POLYETHYLENE
161 X-3368-226-2 ARM (DH) ASSY

162 X-3366-788-2 ARM (DH2) ASSY
163 3-364-504-11 ROLLER (RA)
* 164 3-364-380-11 LEVER, SLIDE
168 3-908-497-01 SPRING (GALVANIZED IRON)
* 169 1-650-650-11 DRIVER BOARD

171 X-3367-910-1 BRACKET (CP) (51) ASSY
172 3-371-504-01 SPRING, TENSION
174 3-380-963-11 SPACER</td><td>Part No. Description

1-659-820-11 DPT BOARD
X-3372-149-1 ARM (KR) SUB ASSY
3-929-743-01 SPRING (DH2)

X-3371-482-1 ARM (DHK) ASSY

X-3371-483-1 ARM (DHK2) ASSY

3-932-163-01 LEVER, SLIDE
3-932-166-01 SPRING
1-659-819-11 DRIVER BOARD

X-3371-484-1 BRACKET (CPK) ASSY
3-932-166-01 SPRING
3-701-438-21 WASHER</td></tr>
<tr><td>50</td><td>Ref.No. Part No. Description

* 202 1-650-648-11 SENSOR BOARD
M501 X-3367-983-1 MOTOR ASSY (ELEVATOR UP/DOWN)</td><td>Part No. Description

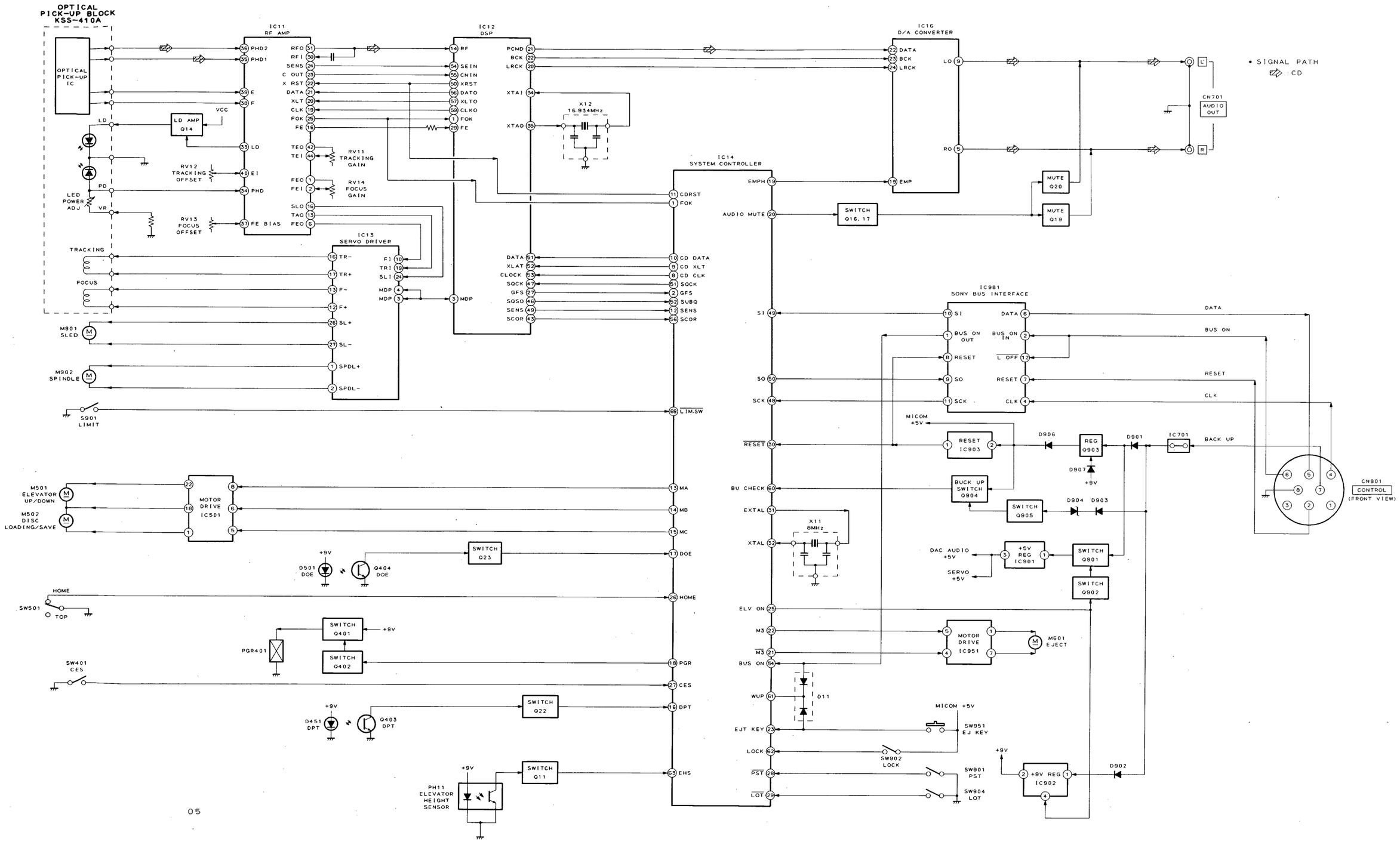
1-659-818-11 SENSOR BOARD
X-3370-179-1 MOTOR (P) ASSY (ELEVATOR UP/DOWN)</td></tr>
</table>

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

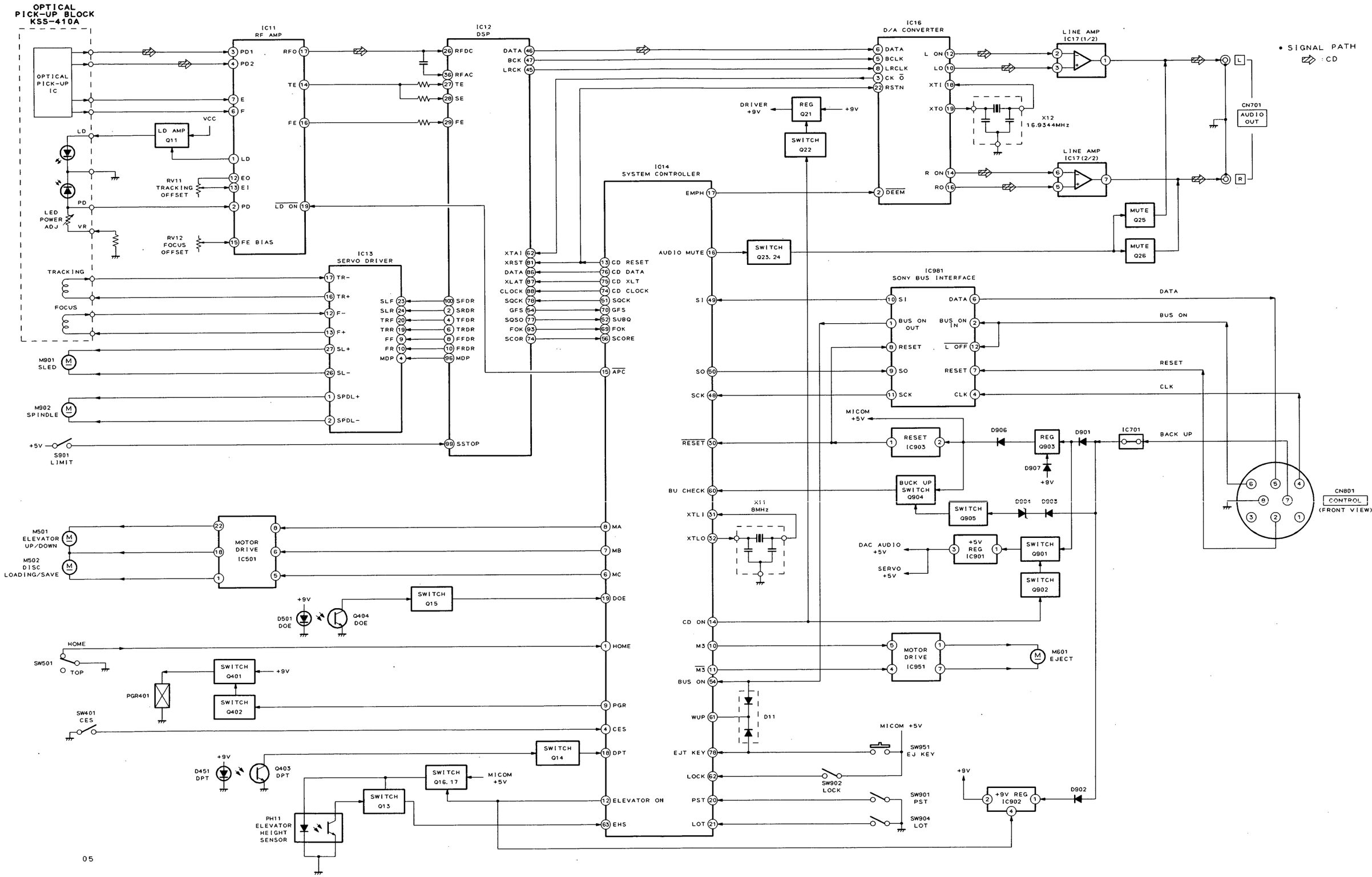
2. BLOCK DIAGRAM

2-1. COMPACT DISC CHANGER SECTION BLOCK DIAGRAM (CDX-52, CDX-52RF: AEP, UK, German, E, Taiwan)



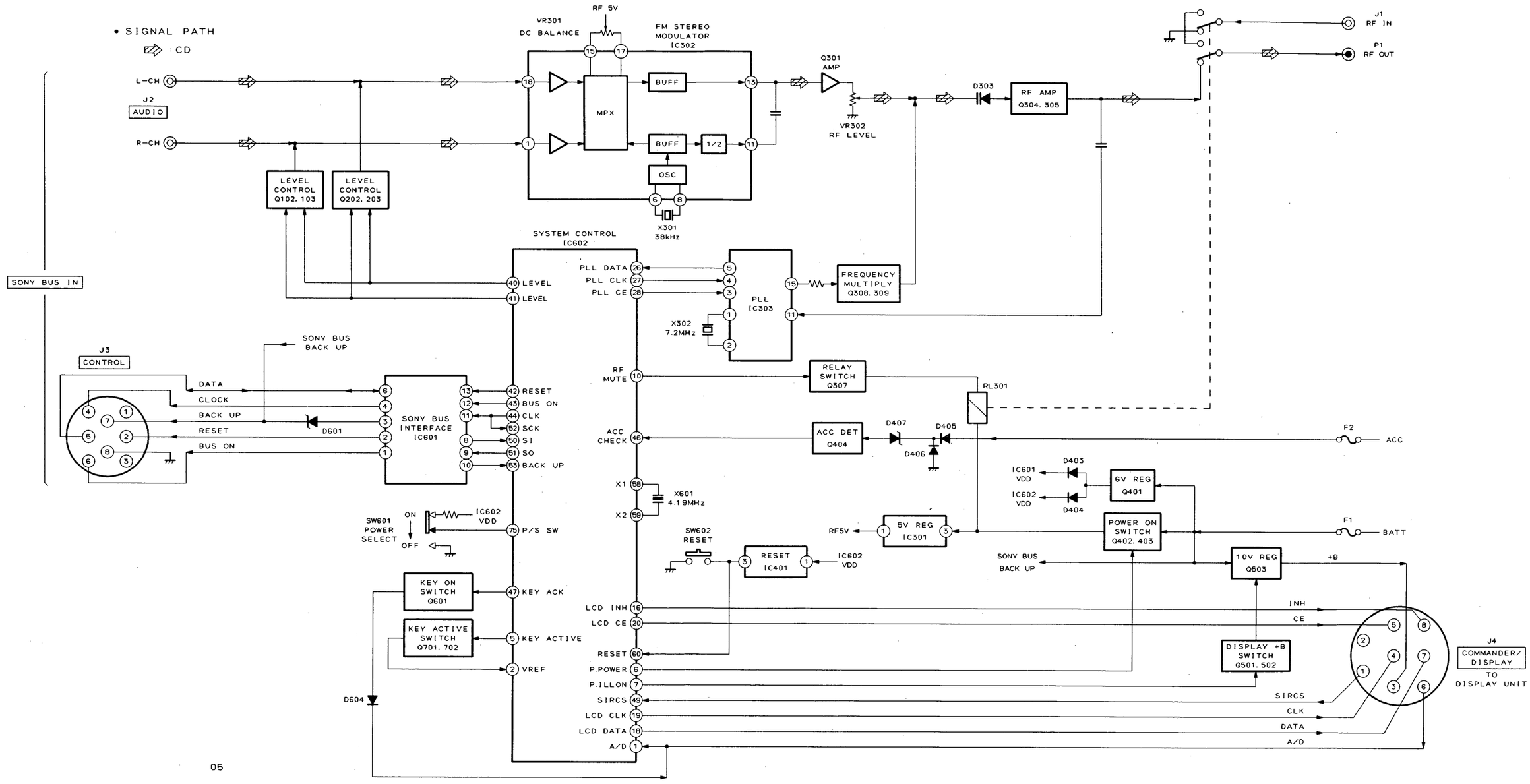
05

2-2. COMPACT DISC CHANGER SECTION BLOCK DIAGRAM (CDX-52RF: US, Canadian)



05

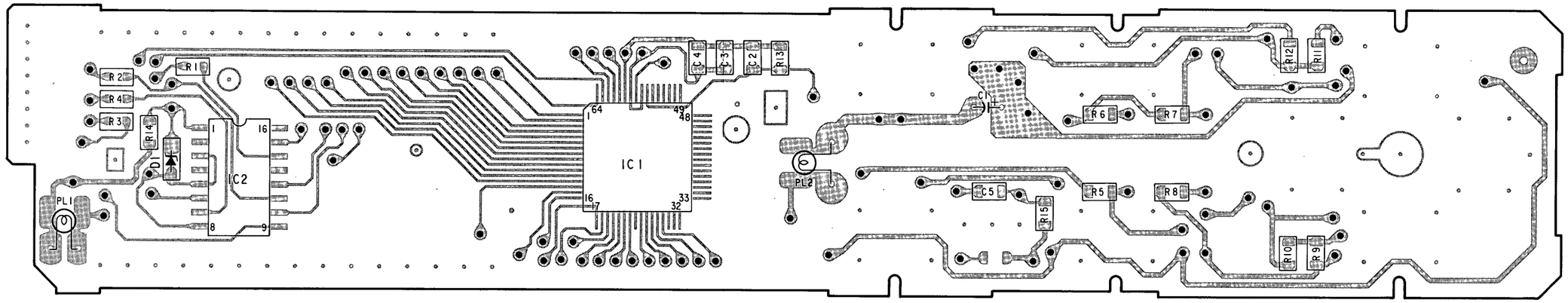
2-3. HIDEAWAY SECTION BLOCK DIAGRAM



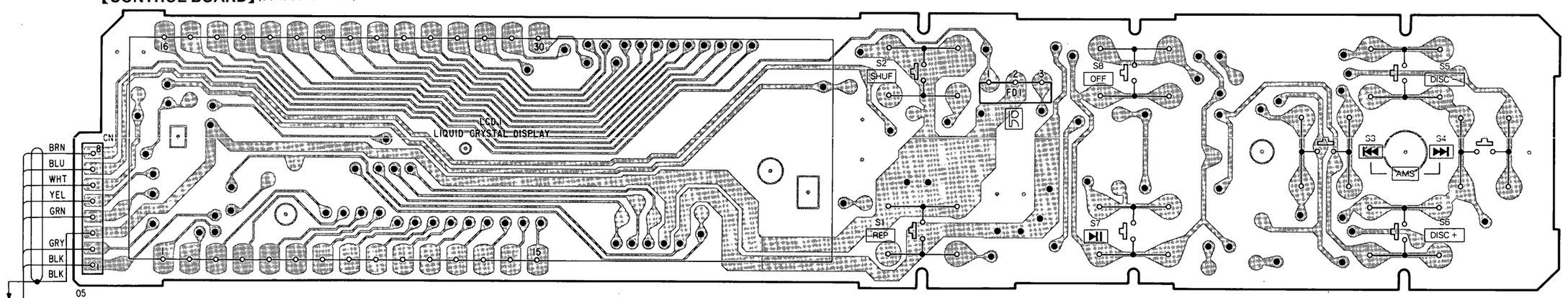
05

3. DISPLAY SECTION PRINRED WIRING BOARD

【CONTROL BOARD】(COMPONENT SIDE)



【CONTROL BOARD】(CONDUCTOR SIDE)



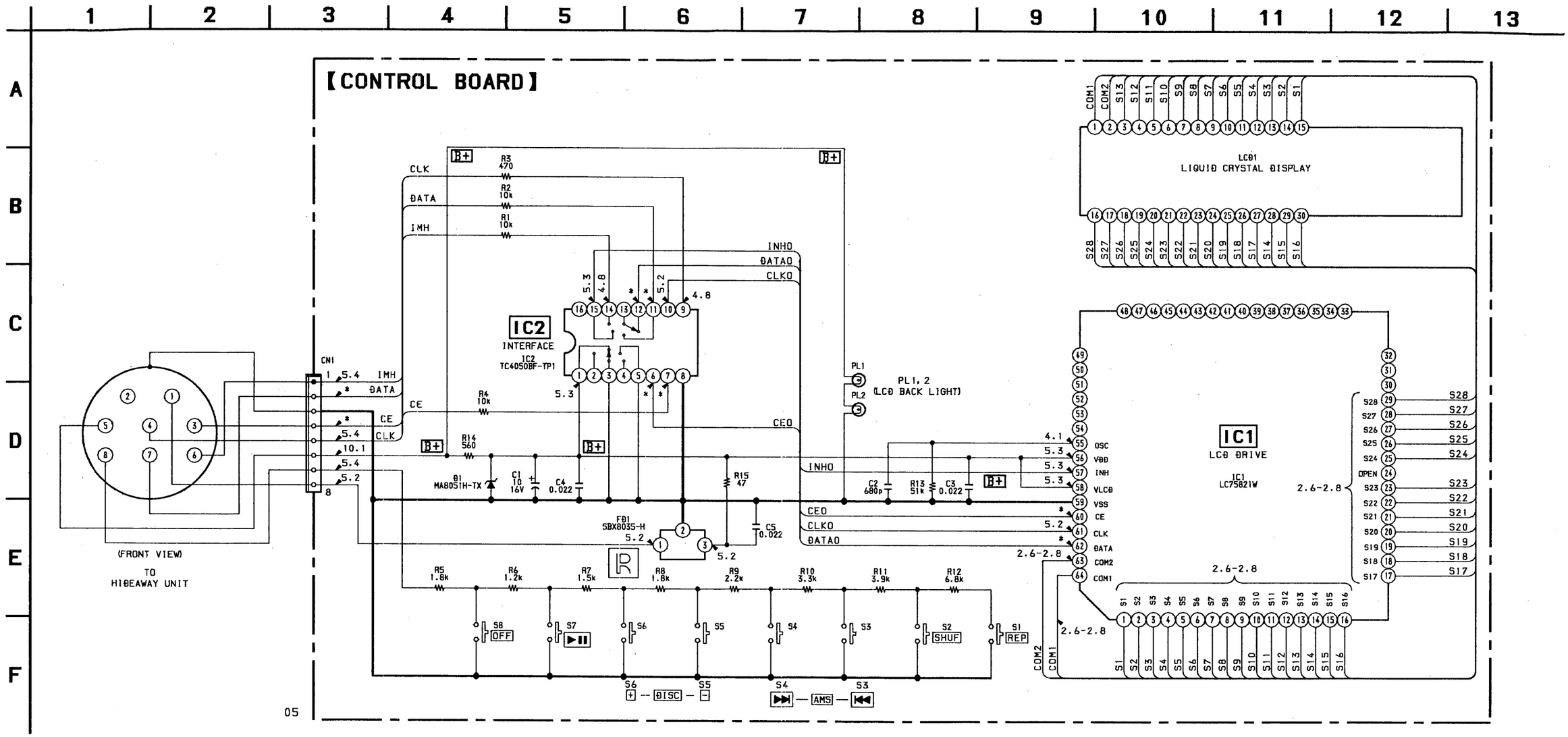
Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

4. DISPLAY SECTION SCHEMATIC DIAGRAM



Note on Schematic Diagram:

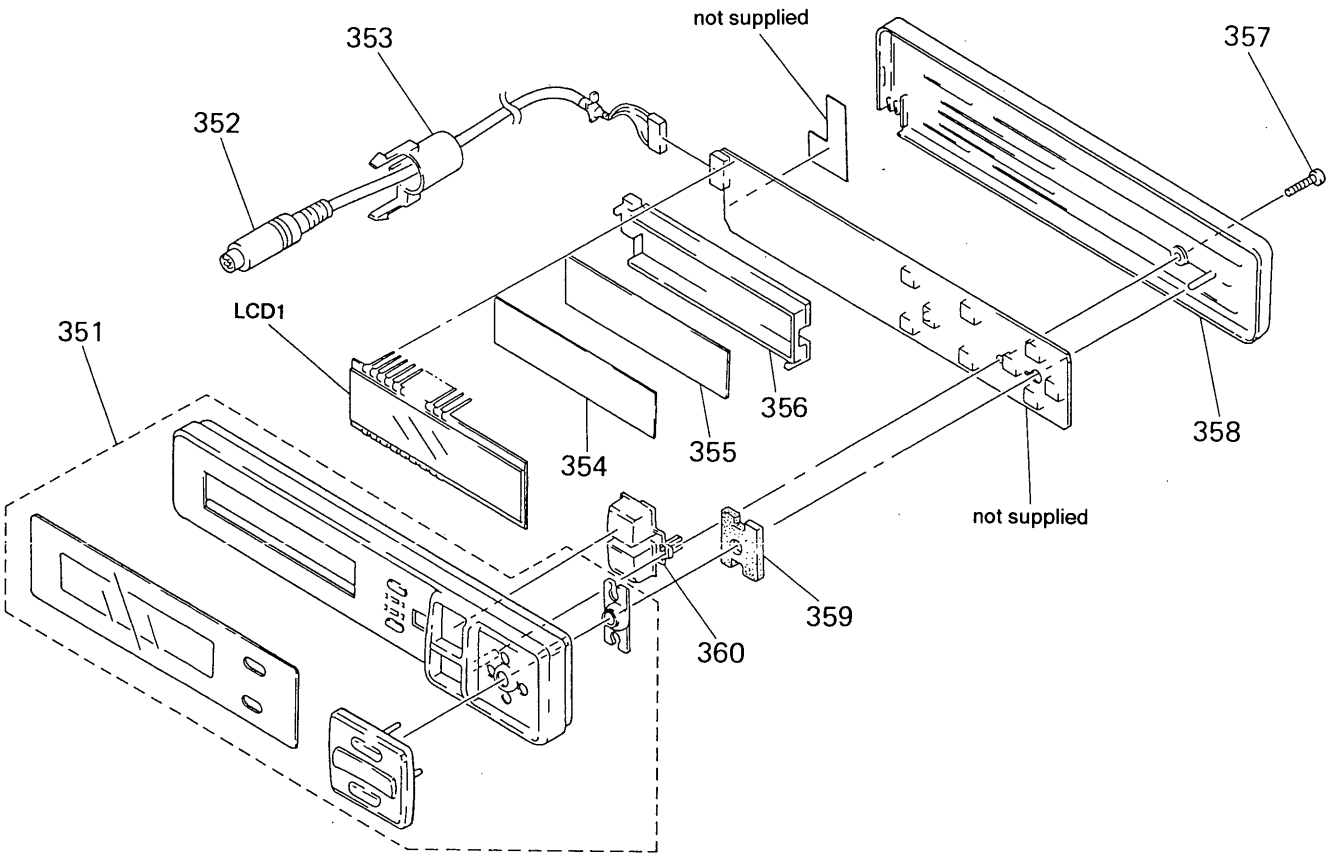
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ▭ : panel designation.
- B + : B + Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from hideaway unit.
- Voltages are dc with respect to ground under no-signal conditions.
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

5. EXPLODED VIEW

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

(8) DISPLAY UNIT SECTION (RM-X57) (CDX-52RF)



Ref. No.	Part No.	Description	Remark
351	9-939-514-01	CASE (UPPER) ASSY	
352	9-939-207-01	CORD (WITH CONNECTOR) (MINI DIN 8P)	
353	3-908-832-01	LOCK (CONNECTOR)	
* 354	3-908-624-11	ILLUMINATOR	
* 355	3-908-623-01	PLATE (LCD), LIGHT GUIDE)	
* 356	3-908-622-01	HOLDER (LCD)	
357	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
358	9-939-201-01	CASE (LOWER)	
359	9-939-208-01	SEPALATOR	
360	9-939-205-01	BUTTON (PLAY) (▶II/OFF)	
LCD1	1-810-406-11	DISPLAY PANEL, LIQUID CRYSTAL	

CONTROL

6. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		CONTROL BOARD			
		**********			
*	3-908-622-01	HOLDER (LCD)			
*	3-908-623-01	PLATE (LCD), LIGHT GUIDE			
*	3-908-624-11	ILLUMINATOR			
		< CAPACITOR >			
C1	1-104-951-11	ELECT	10uF	20%	16V
C2	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C3	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C4	1-163-033-11	CERAMIC CHIP	0.022uF		50V
C5	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
		< DIODE >			
D1	8-719-422-43	DIODE	MA8051-H		
		< RAY CATCHER ELEMENT >			
FD1	8-748-035-08	ELEMENT, RAY CATCHER			
		< IC >			
IC1	8-759-289-80	IC	LC75821W-DS		
IC2	8-759-009-04	IC	MC14050BF		
		< LIQUID CRYSTAL DISPLAY >			
LCD1	1-810-406-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL1	9-936-094-01	LAMP, PILOT			
PL2	9-936-094-01	LAMP, PILOT			
		< RESISTOR >			
R1	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2	1-216-833-11	METAL CHIP	10K	5%	1/16W
R3	1-216-817-11	METAL CHIP	470	5%	1/16W
R4	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R6	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R7	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R8	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R9	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R10	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R11	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R12	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R13	1-216-090-00	METAL CHIP	51K	5%	1/10W
R14	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R15	1-216-017-00	METAL CHIP	47	5%	1/10W
		< SWITCH >			
S1	9-939-210-01	SWITCH (REP)			
S2	9-939-210-01	SWITCH (SHUF)			
S3	9-939-210-01	SWITCH (⏮)			
S4	9-939-210-01	SWITCH (⏭)			
S5	9-939-210-01	SWITCH (DISC-)			
S6	9-939-210-01	SWITCH (DISC+)			
S7	9-939-210-01	SWITCH (⏯)			
S8	9-939-210-01	SWITCH (OFF)			
		MISCELLANEOUS			
		**********			
352	9-939-207-01	CORD (WITH CONNECTOR) (MINI DIN 8P)			
LCD1	1-810-406-11	DISPLAY PANEL, LIQUID CRYSTAL			

9-923-459-81

Sony Corporation
Personal & Mobile Communication Company

English
96E0581-1
Printed in Japan
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CDX-52/52RF

SONY

SERVICE MANUAL

US Model
Canadian Model
E Model
CDX-52/52RF
AEP Model
UK Model
CDX-52RF

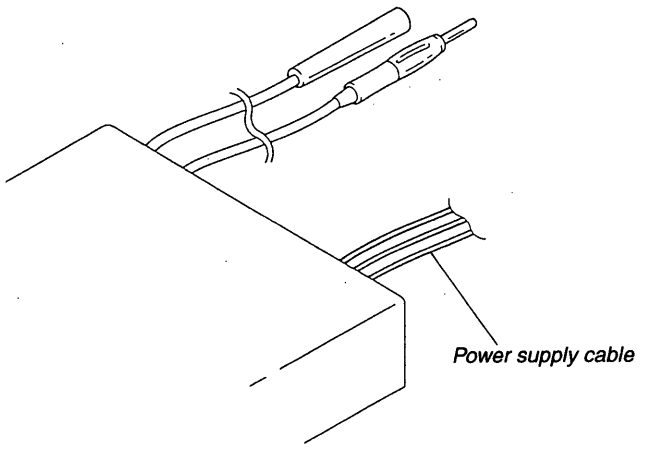
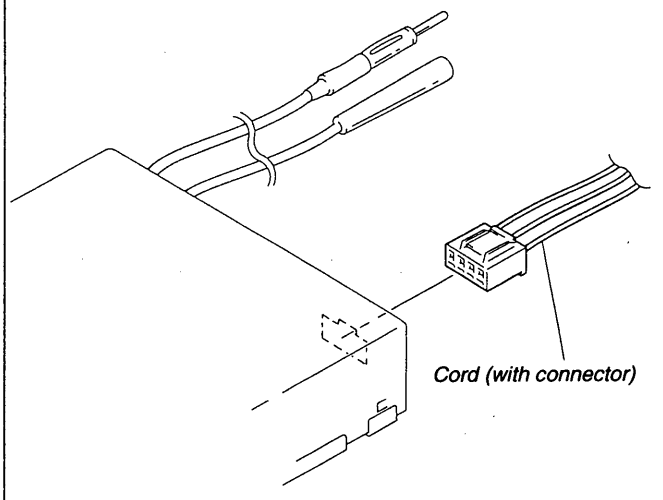
SUPPLEMENT-2

File this supplement with the service manual.

Subject: Hideaway Unit Modification

(ENG-96020)

• **New/Former Discription**

Former Type	New Type
	

EXPLODED VIEW

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearrance Parts

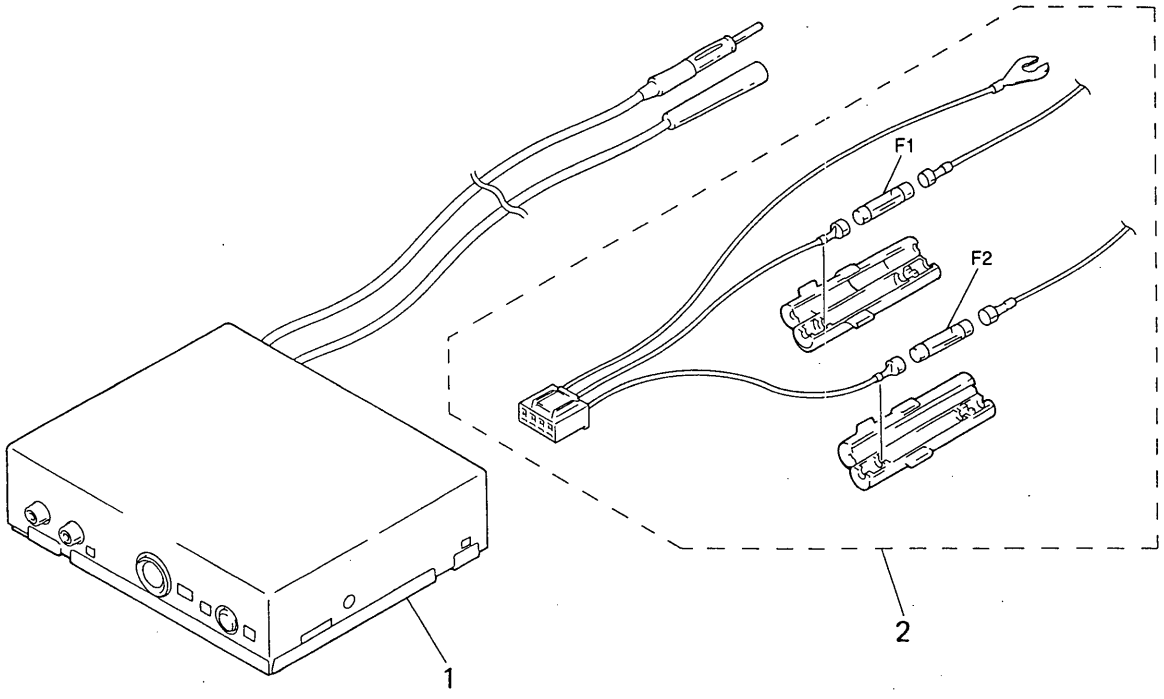
  Example:

  KNOB, BALANCE (WHITE) . . . (RED)

  ↑ ↑

  Parts Color Cabinet's Color

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



Ref. No.	Part No.	Description	Remark
1	1-473-879-11	RF UNIT (HIDEAWAY)	
2	1-777-519-11	CORD (WITH CONNECTOR)	
F1	1-532-416-00	FUSE (3.15A)	
F2	1-532-360-XX	FUSE (1A)	

9-923-459-82

Sony Corporation

Personal & Mobile Communication Company

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CDX-52/52RF

SONY

SERVICE MANUAL

US Model
Canadian Model
E Model
CDX-52/52RF
AEP Model
UK Model
CDX-52RF

SUPPLEMENT-3

File this supplement with the service manual.

Subject: Optical Pick-up Block Modification

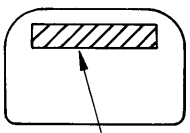
(ENG-96025)

Optical pick-up block was been changed from MG-153CD-131 to MG-154CD-131 in the midst of production. At the same time, servo board was been changed.

1. NEW/FORMER DISCRIMINATION

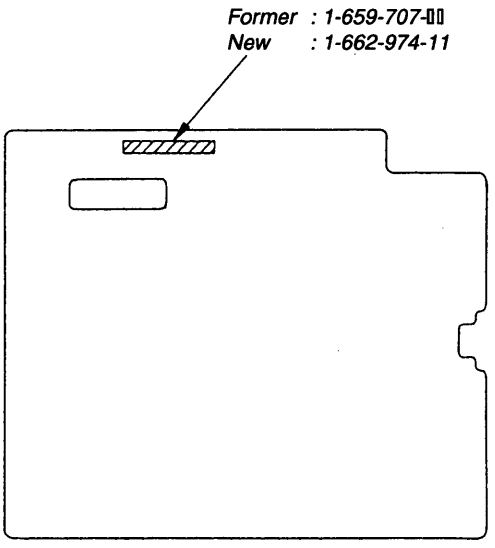
• Optical Pick-up

Label stuck outside of the optical pick-up



Former : KSS-410A
New : KSS-520A

• Servo Board – Conductor Side –

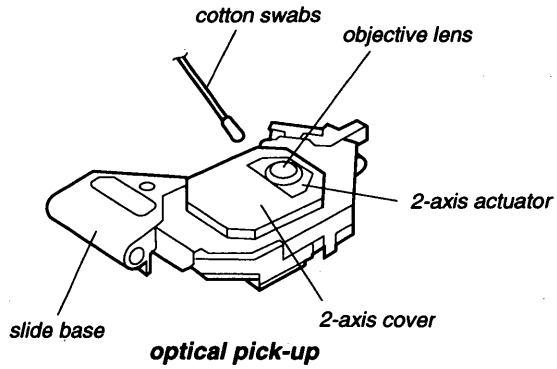


2. SERVICING NOTES

NOTES ON PICK-UP FLEXIBLE BOARD

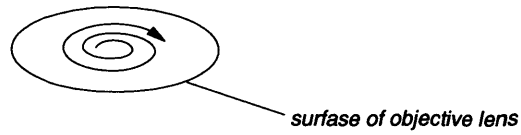
The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.
Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

NOTES ON CLEANING THE OBJECTIVE LENS



optical pick-up

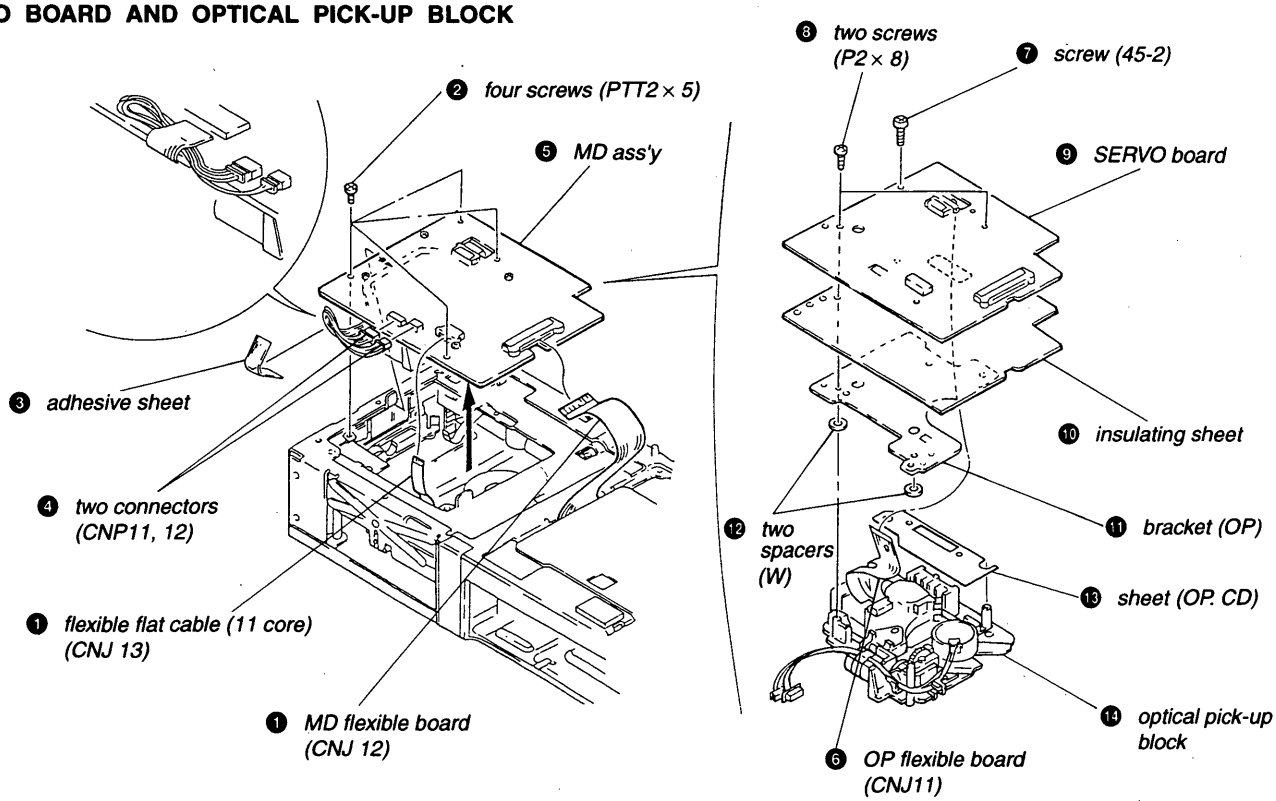
Apply CD lens cleaner B-4 (Part No.: J-2501-000-A) to cotton swabs (narrow type) (Part No.: J-2501-023-A) to be lightly wet. Use a force (about 5 g (0.18 oz)) to make the objective lens in contact with the bottom lightly, and clean the lens by spirals as following below.
Replace the cotton swab and repeat this cleaning two or three times.



Notes:
Do not force to push the objective lens. Otherwise, the plate spring supporting the objective lens will be bent, causing a deteriorated RF waveform.
Never touch anything other than the objective lens. Otherwise, a significant deterioration occurs in the RF waveform.

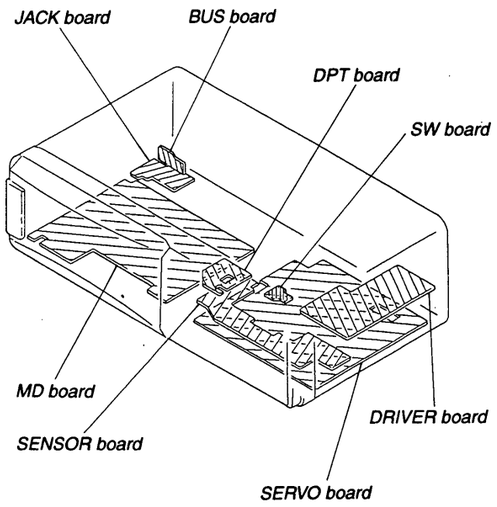
3. DISASSEMBLY

SERVO BOARD AND OPTICAL PICK-UP BLOCK


❽ two screws (P2 × 8)
❼ screw (45-2)
❷ four screws (PTT2 × 5)
❺ MD ass'y
❾ SERVO board
❸ adhesive sheet
❿ insulating sheet
❹ two connectors (CNP11, 12)
⓬ two spacers (W)
⓫ bracket (OP)
⓭ sheet (OP. CD)
❶ flexible flat cable (11 core) (CNJ 13)
⓮ optical pick-up block
❶ MD flexible board (CNJ 12)
❻ OP flexible board (CNJ11)

4. DIAGRAMS

• Circuit Boards Location



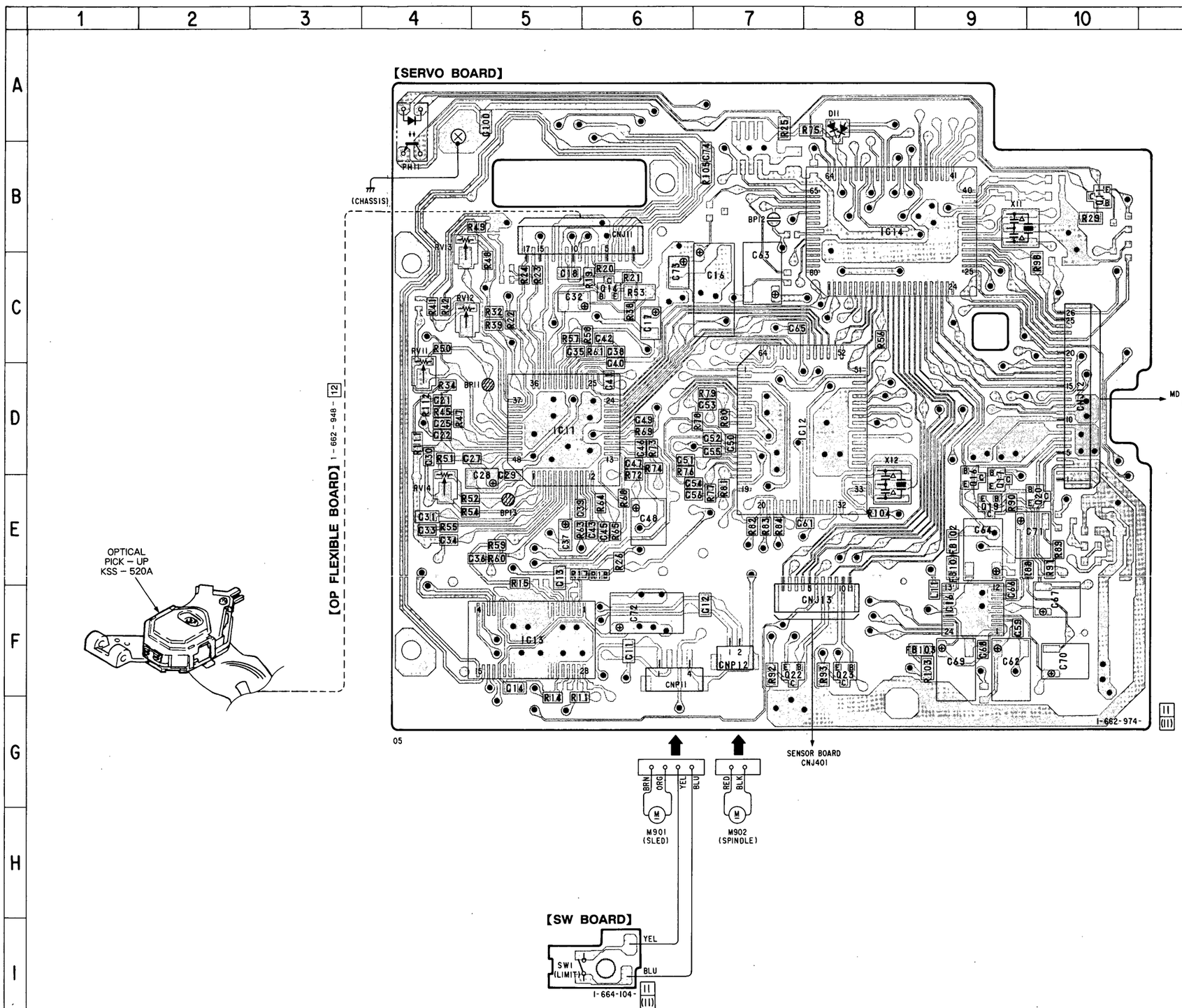
• Semiconductor Location

Ref. No.	Location
D11	A-8
IC11	D-5
IC12	D-7
IC13	F-5
IC14	B-8
IC16	F-9
Q11	B-10
Q14	C-6
Q16	E-9
Q17	E-9
Q19	E-9
Q20	E-10
Q22	F-7
Q23	F-8

Note on Printed Wiring Board:

- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒▒ : Pattern of the rear side.
- ▒▒ : Pattern from the side which enables seeing.

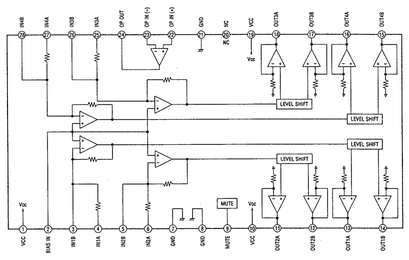
4-1. PRINTED WIRING BOARDS



4-2. SCHEMATIC DIAGRAM

• IC Block Diagram

IC13 BA5941FP-E2 (SERVO BOARD)



Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.

Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CD changer controller.
- Voltages are dc with respect to ground under no-signal conditions. no mark : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇛ : CD

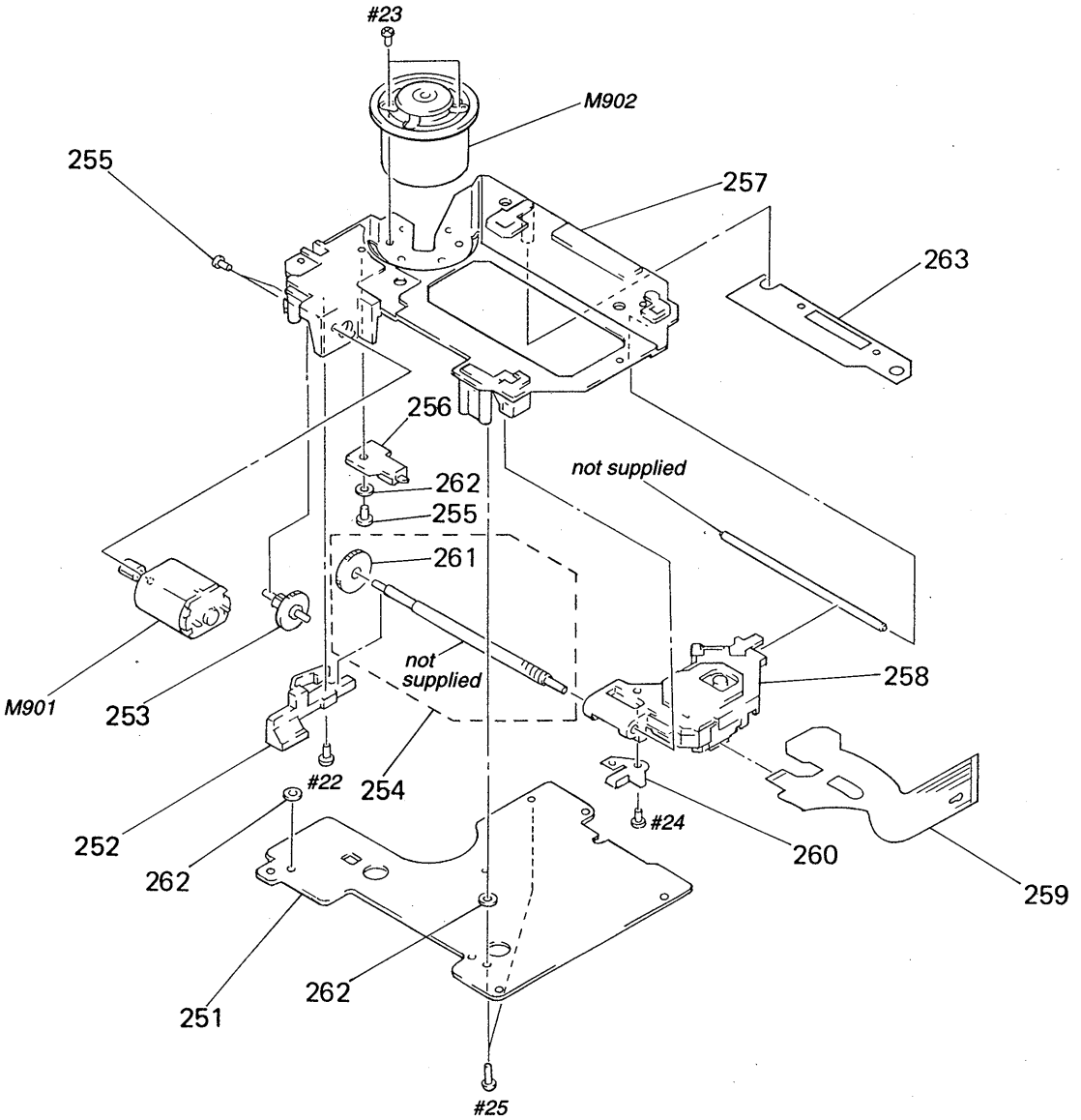
5. EXPLODED VIEWS

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

OPTICAL PICK-UP SECTION (MG-154CD-131)



Ref. No.	Part No.	Description	Remark
* 251	3-908-094-02	BRACKET (OP)	
252	3-008-800-01	HOLDER, GEAR	
253	3-908-091-01	GEAR (MID)	
254	A-3291-896-A	GEAR (SLED) ASSY	
255	3-910-519-01	SCREW (SL)	
* 256	1-664-104-11	SW BOARD	
* 257	3-008-798-01	CHASSIS (O/S)	
⚠258	8-848-402-02	OPTICAL PICK-UP KSS-520A/J-N	
259	1-662-948-11	OP FLEXIBLE BOARD	
260	3-931-834-01	SPRING (FEED), PLATE	
261	3-908-092-01	GEAR (SLED)	
262	3-387-948-01	SPACER (W)	
263	3-926-531-01	SHEET (OP.CD)	
M901	A-3291-895-A	MOTOR (SLED) ASSY	
M902	A-3291-897-A	MOTOR (SP) ASSY (SPINDLE)	
#22	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#23	7-627-552-07	SCREW, PRECISION +P 1.7X2.5 NON-SLIT	
#24	7-627-553-37	SCREW, PRECISION +P 2X3	
#25	7-685-105-19	TAPPING +P 2X8 NON-SLIT	

6. ELECTLICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
	A-3309-932-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C11	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C12	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C13	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C14	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C16	1-110-450-11	SOLID CHIP	100uF	20%	6.3V
C17	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C18	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C21	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C22	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C25	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C27	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C28	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C29	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C30	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C31	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C32	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C33	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C34	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C35	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C36	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C37	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C38	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C39	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C40	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C41	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C42	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C43	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C45	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C46	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C47	1-115-156-11	CERAMIC CHIP	1uF		10V
C48	1-110-454-11	SOLID CHIP	10uF	20%	16V
C49	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C50	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C51	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C52	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C53	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C54	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C55	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C56	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C59	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C61	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C62	1-110-449-11	SOLID CHIP	47uF	20%	6.3V
C63	1-110-449-11	SOLID CHIP	47uF	20%	6.3V
C64	1-110-449-11	SOLID CHIP	47uF	20%	6.3V
C65	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C66	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C67	1-110-454-11	SOLID CHIP	10uF	20%	16V
C68	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C69	1-110-449-11	SOLID CHIP	47uF	20%	6.3V
C70	1-110-454-11	SOLID CHIP	10uF	20%	16V
C71	1-110-454-11	SOLID CHIP	10uF	20%	16V
C72	1-110-452-11	SOLID CHIP	47uF	20%	10V
C73	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C74	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C100	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNJ11	1-764-438-21	CONNECTOR, FPC 17P			
CNJ12	1-770-351-11	CONNECTOR, FPC 26P			
CNJ13	1-764-439-21	CONNECTOR, FPC 11P			
CNP11	1-580-057-11	PIN, CONNECTOR 4P			
CNP12	1-580-055-21	PIN, CONNECTOR 2P			
		< DIODE >			
D11	8-719-801-78	DIODE 1SS184			

SERVO

Ref. No.	Part No.	Description			Remark
		< FERRITE BEAD >			
FB101	1-550-907-21	BEAD, FERRITE (CHIP)			
FB102	1-550-907-21	BEAD, FERRITE (CHIP)			
FB103	1-550-907-21	BEAD, FERRITE (CHIP)			
		< IC >			
IC11	8-752-074-34	IC CXA1782CQ			
IC12	8-752-372-94	IC CXD2507AQ			
IC13	8-759-429-32	IC BA5941FP-E2			
IC14	8-752-882-36	IC CXP84120-059Q			
IC16	8-759-327-78	IC TC9404FN-EL			
		< COIL >			
L11	1-412-985-31	INDUCTOR 3.3uH			
		< PHOTO INTERRUPTER >			
PH11	8-749-925-02	PHOTO INTERRUPTER SG-223			
		< TRANSISTOR >			
Q11	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q14	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q16	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q17	8-729-027-23	TRANSISTOR DTA114EKA-T146			
Q19	8-729-015-39	TRANSISTOR DTC323TK			
Q20	8-729-015-39	TRANSISTOR DTC323TK			
Q22	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q23	8-729-027-31	TRANSISTOR DTA124EKA-T146			
		< RESISTOR >			
R11	1-216-864-11	METAL CHIP	0	5%	1/16W
R14	1-216-864-11	METAL CHIP	0	5%	1/16W
R15	1-216-864-11	METAL CHIP	0	5%	1/16W
R17	1-216-864-11	METAL CHIP	0	5%	1/16W
R18	1-216-833-11	METAL CHIP	10K	5%	1/16W
R19	1-216-845-11	METAL CHIP	100K	5%	1/16W
R20	1-216-839-11	METAL CHIP	33K	5%	1/16W
R21	1-216-857-11	METAL CHIP	1M	5%	1/16W
R22	1-216-845-11	METAL CHIP	100K	5%	1/16W
R23	1-216-839-11	METAL CHIP	33K	5%	1/16W
R24	1-216-839-11	METAL CHIP	33K	5%	1/16W
R25	1-216-045-00	METAL CHIP	680	5%	1/10W
R26	1-216-833-11	METAL CHIP	10K	5%	1/16W
R29	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R32	1-216-857-11	METAL CHIP	1M	5%	1/16W
R34	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R38	1-216-833-11	METAL CHIP	10K	5%	1/16W
R39	1-216-857-11	METAL CHIP	1M	5%	1/16W
R41	1-216-840-11	METAL CHIP	39K	5%	1/16W
R42	1-216-837-11	METAL CHIP	22K	5%	1/16W
R45	1-216-851-11	METAL CHIP	330K	5%	1/16W
R47	1-216-849-11	METAL CHIP	220K	5%	1/16W
R48	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R49	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R50	1-216-833-11	METAL CHIP	10K	5%	1/16W
R51	1-216-864-11	METAL CHIP	0	5%	1/16W
R52	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R53	1-216-158-00	METAL GLAZE	22	5%	1/8W
R54	1-216-845-11	METAL CHIP	100K	5%	1/16W
R55	1-216-855-11	METAL CHIP	680K	5%	1/16W
R56	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R57	1-216-834-11	METAL CHIP	12K	5%	1/16W
R58	1-216-837-11	METAL CHIP	22K	5%	1/16W
R59	1-216-851-11	METAL CHIP	330K	5%	1/16W
R60	1-216-847-11	METAL CHIP	150K	5%	1/16W
R61	1-216-837-11	METAL CHIP	22K	5%	1/16W
R63	1-218-273-11	METAL GLAZE	510K	5%	1/16W
R64	1-216-842-11	METAL CHIP	56K	5%	1/16W
R65	1-216-850-11	METAL CHIP	270K	5%	1/16W
R68	1-216-845-11	METAL CHIP	100K	5%	1/16W
R69	1-216-849-11	METAL CHIP	220K	5%	1/16W
R72	1-216-839-11	METAL CHIP	33K	5%	1/16W
R73	1-216-847-11	METAL CHIP	150K	5%	1/16W
R74	1-216-839-11	METAL CHIP	33K	5%	1/16W
R75	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R76	1-216-856-11	METAL CHIP	820K	5%	1/16W
R77	1-216-849-11	METAL CHIP	220K	5%	1/16W
R78	1-216-833-11	METAL CHIP	10K	5%	1/16W
R79	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R80	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R81	1-216-833-11	METAL CHIP	10K	5%	1/16W
R82	1-216-813-11	METAL CHIP	220	5%	1/16W
R83	1-216-813-11	METAL CHIP	220	5%	1/16W
R84	1-216-813-11	METAL CHIP	220	5%	1/16W
R88	1-216-809-11	METAL CHIP	100	5%	1/16W
R89	1-216-809-11	METAL CHIP	100	5%	1/16W
R90	1-216-845-11	METAL CHIP	100K	5%	1/16W
R91	1-216-845-11	METAL CHIP	100K	5%	1/16W
R92	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R93	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R98	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R103	1-216-009-00	METAL CHIP	22	5%	1/10W
R104	1-216-813-11	METAL CHIP	220	5%	1/16W
R105	1-216-809-11	METAL CHIP	100	5%	1/16W
R111	1-216-837-11	METAL CHIP	22K	5%	1/16W
R112	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV11	1-238-091-11	RES, ADJ, CERMET 22K	
RV12	1-238-094-11	RES, ADJ, CERMET 220K	
RV13	1-238-091-11	RES, ADJ, CERMET 22K	
RV14	1-238-091-11	RES, ADJ, CERMET 22K	
		< VIBRATOR >	
X11	1-760-479-11	VIBRATOR, CERAMIC (8.0MHz)	
X12	1-760-241-11	VIBRATOR, CERAMIC (16.934MHz)	
**********			
*	1-664-104-11	SW BOARD	
		********	
		< SWITCH >	
SW1	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)	
**********			

9-923-459-83

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CDX-52/52RF

SONY

SERVICE MANUAL

US Model
Canadian Model
E Model
CDX-52/52RF
AEP Model
UK Model
CDX-52RF

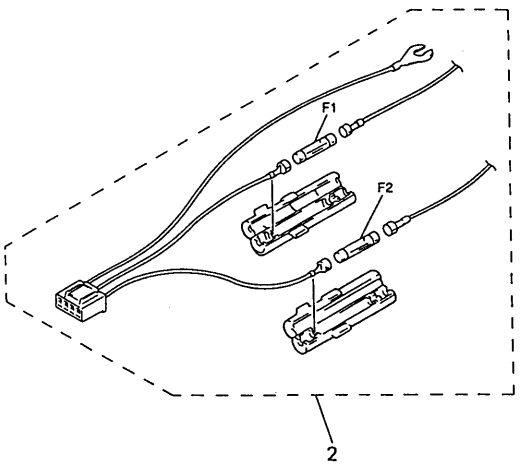
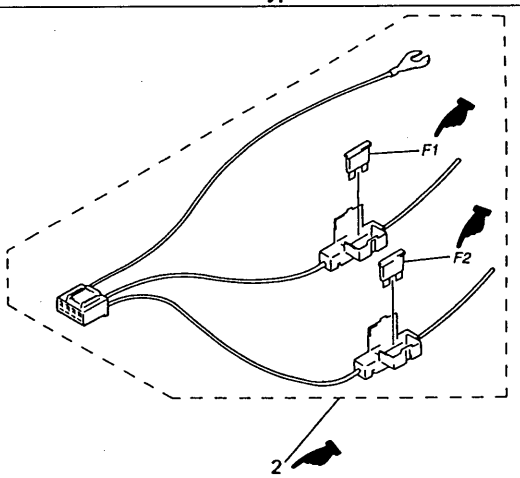
SUPPLEMENT-4

File this supplement with the service manual.

Subject: Cord (with connector) (for RF unit) Modification

(ENG-97004)

☛: **Indicates changed portion.**

Page	Former Type	New Type
2		

Ref. No.	Part No.	Description
2	1-777-519-11	CORD (WITH CONNECTOR)
F1	1-532-416-00	FUSE (3.15A)
F2	1-532-360-XX	FUSE (1A)

Ref. No.	Part No.	Description
2	1-777-519-12	CORD (WITH CONNECTOR) (POWER) ☛
F1	1-532-731-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A/32V) ☛
F2	1-532-798-11	FUSE (BLADE TYPE) (AUTO FUSE) (1A/32V) ☛

* Page on SERVICE MANUAL SUPPLEMENT-2.

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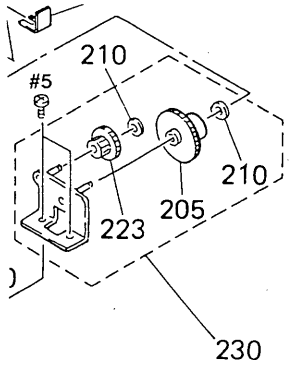
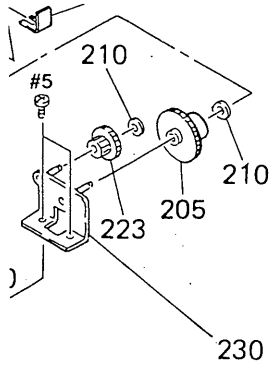
CDX-52RF

CORRECTION-1

Correct your service manual as shown below.

Page	INCORRECT	CORRECT
50		

(RPC-98001)

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